

The Darkling Beetles
(*Coleoptera: Tenebrionidae*)
of

Qatar



Laurent SOLDATI



THE DARKLING BEETLES OF QATAR

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(Insecta: Coleoptera: Tenebrionidae)

WARSZAWA 2009

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Foreword

This work on the Tenebrionidae of Qatar could not have been born without an initial meeting with the late Dr. Adnan BABI who initiated, in November 2001, a collaboration between entomologists of the INRA in Montpellier and various partners in Qatar, of which the Friends of the Environment Center and the University of Doha. This project, which was not to be more than an inventory of the insects of agronomic interest of Qatar in the beginning, has, with the passing years and field researches, taken the consistency of a true scientific inventory of the whole entomological fauna of this country. It then quickly appeared to us that the Tenebrionid beetles held one of the first places among the insects of Qatar, in term of abundance and number of species.

In 2005, a second meeting with one of the best specialists of this beetle family, Laurent SOLDATI, allowed the development and the realization of this work. It is a true Fauna of the Tenebrionidae of Qatar that Laurent SOLDATI proposes to us.

Who could have thought that this small emirate, with a surface of 11 427 km² counted so many species of insects (approximately 500 listed to date)? Who could have supposed that Qatar concealed species of Coleoptera, Hemiptera or Lepidoptera new for Science (i.e., not described), among which some are even endemic to this country? Who could have imagined that the Tenebrionid beetles are represented by more than 55 species in Qatar (of which five are new for science)?

It is necessary to congratulate Laurent SOLDATI for the quality, the rigour and the precision of the fauna that he presents to us. Beyond the simple inventory of biodiversity, this important and difficult work makes our knowledge on the systematic and the faunistic of the Tenebrionidae of this area progress appreciably.

This outstandingly illustrated book, true scientific work, also invites us to discover the Tenebrionidae. Insects of the deserts, they are also mystical, mythical and fascinating animals, as you will discover it when reading the introductory chapters. The biology of many species still remains largely unknown, but they are endowed with extraordinary adaptive faculties to this life in so particular environments, sometimes within ultimate climatic conditions.

This fauna could not have been published without the financial and logistic support of various collaborators and partners implied in the preliminary draft.

For Qatar: the Friends of the Environment Center, the University of Qatar (College of Arts and Sciences) and the Qatar National Bank.

For France: the National Institute of Agronomic Researches (INRA Montpellier), the French Embassy in Qatar and the petroleum company Total-Elf-Fina.

May all these collaborators and partners, as well as the entomologists who collected insects during several field trips, be thanked. This work on the Tenebrionidae and the other publications resulting from this collaboration, or the forthcoming ones, are the best proofs of the success of this ambitious inventory project of the insects of Qatar. It is also the best reward for the efforts made by all.

Finally, it is for me an honour and a real pleasure to write the foreword of this splendid work carried out by my talented colleague entomologist Laurent SOLDATI.

M. MARTINEZ
Grabels, May 29th 2008

I. INTRODUCTION

Abbreviations used in the text:

- CBGP Centre de Biologie et de Gestion des Populations, Montpellier, France;
FEC Friends of the Environment Center, Doha, Qatar;
MCG Museo Civico di Storia Naturale, Genova, Italy;
MIZ Museum and Institute of Zoology, Polish Academy of Sciences,
Warsaw, Poland;
MNHN Muséum National d'Histoire Naturelle, Paris, France;
SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany.

All the terms of the entomological vocabulary used in this book are based on *A Dictionary of Entomology* (GORDON & HEADRICK 2001). However, some terms in grey outline within the text, are explained in the chapter "VII. Lexicon".

In the same way, the English spelling of the Arabian toponyms used in the text refers exclusively to the map "Qatar", scale 1 : 230 000, GEOprojects Ed. (2nd edition revised 2002).

1. Qatar – environmental sketch and biogeography

Qatar is an emirate in the East of the Arabic Peninsula, bordering the Arabo-Persian Gulf and Saudi Arabia. Its surface is estimated to 11 437 km² on a land that extends from Arabia for some 160 km North into the Arabo-Persian Gulf.

The climate is of the desert type. Rainfall is weak, averaging 75 to 100 millimeters per year, limited to the winter season, and falling in brief, sometimes heavy, storms that often flood the usually dry *wadis*. Occasionally, sudden dust storms also affect this country, blotting out the sun and sometimes causing wind damage. The long summer, extending from June to September, is characterized by

intense heat and alternating dryness and humidity, with temperatures exceeding 55°C. Weather is moderate in autumn/winter, mainly from November through May, although temperatures can fall to 10–20°C, which is quite cool for the latitude.

Most of the country consists of a desert, but small areas located mainly in the east and near the coast, house different vegetation zones, where trees, shrubs and reeds can grow.

The country is essentially flat and rocky, except for the elevated limestone formations of the Dukhan Mounts in the west and the relatively low cliffs of Fuwairit in the North-East. The highest point (103 meters) is located in the south, in the province of Jeryan al Batna, at the East-South-East of Al Jaow al Ramli. On average, the reliefs do not exceed an altitude of 40 m high. Great sand dunes (barkhans) rise in the surroundings of the inland sea of Khor al Adaid.

In such places, live some true sabulicolous insects. Great salted depressions are frequent inland and constitute particularly interesting biotopes for halophilous species. The littoral zone, of approximately 550 km, mainly consists of beaches. These littoral biotopes are also favourable zones, where the entomological fauna, beetles and especially Tenebrionidae, concentrates. In the South, near the Saudi Arabian border, the true desert is the place where eremophilous and usually highly specialised Tenebrionidae live. On the south-western coast (district of Al Jemaliya), the palm grove of Umm Bab and its surrounding beach is one of the most interesting and richest ecosystems of the country. This area, like the one of Sealine Beach Resort (Mesaieed), should be partially or totally protected, because they are among the most beautiful landscapes of Qatar, in particular from an ecological point of view.

Distribution patterns of the Tenebrionidae species of Qatar

In the beginning, we have chosen to classify the tenebrionid fauna of Qatar according to the recent chorotype-classification proposed by VIGNA TAGLIANTI *et al.* (1999). The latter has the advantage of avoiding any ambiguity in the interpretation of the different biogeographical zones concerned. However, this chorotype-classification turned out to be uncomplete without the creation of some new combinations. So, we finally decide to also refer to LILLIG & PAVLIČEK (2003) and to combine both sources in an effort to make easier the comparison between the faunas of Sinai and Qatar.

Lastly, the new species described for the first time within this study and only known at the present time from Qatar can fit as well to the chorotypes *Endemic* or *Arabian*. Considering the biogeographical configuration and the much reduced surface of this country, it seems little probable that all these species can be true

endemics. Therefore they appear, with the exception of *Apsheronellus arabicus* sp. nov., at least on a provisional basis, among the elements of the “*Arabian*” type. The case of *Apsheronellus arabicus* is appreciably different: its discovery in a particular biotope of littoral sand dunes, where an endemic plant of Qatar (*Zygophyllum qatarense* HADIDI, 1978) grows, allows to consider it as an endemic.

We propose the following chorotype-classification:

Arabian – 20 species: *Apentanodes arabicus* (KIRSCHBERG), *Erodius* (*Eodiosis*) *sauditus* KASZAB, *Imatismus* (*Curimosphena*) *arabicus* KASZAB, *Hyperops* (*Belutschistanops*) *pygmaea arabica* (KOCH), *Mesostena angustata deserticola* ssp. nov., *Microdera* (*Tentyrodera*) *marginata deserticola* (BLAIR), *Tentyrina palmeri thomasi* (BLAIR), *Oxycara buettikeri* KASZAB, *Oxycara* (*Symphoxycara*) *hansbremeri* LILLIG, *Ammogiton schawalleri* sp. nov., *Adesmia* (*Oteroscelis*) *khaliensis* BLAIR, *Paraplatyope arabica* (BLAIR), *Blaps kollarii* SEIDLITZ, *Dilamus arabicus* KASZAB, *Gonocephalum besnardi* KASZAB, *Trachyscelis litoralis* sp. nov., *Phtora salina* sp. nov., *Centorus csikii bagdadensis* REITTER, *Thriptera kraatzi* HAAG-RUTENBERG and *Pimelia arabica* KLUG).

N-African – 1 species: *Pseudoseriscius griseovestis* FAIRMAIRE.

SW-Asiatic – 1 species: *Zophosis* (*Septentriophosis*) *complanata* SOLIER.

Turanian – 6 species: *Prochoma* (*Oxypistoma*) *bucculenta* KOCH, *Falsocatomulus euphraticus* PIC, *Girardius persicus* BAUDI, *Trachyderma parvicollis* BAUDI, *Prodilamus mandli* (KASZAB), *Penthicus oblogopunctatus* (REITTER).

NE-African-Sindian – 4 species: *Mesostena puncticollis* SOLIER, *Adesmia* (*Macradesmia*) *cancellata* KLUG, *Gonocephalum consobrinum* BLAIR, *Phaleria prolixa* FAIRMAIRE.

Afro-Arabian – 5 species: *Akis spinosa* (LINNAEUS), *Prionotheca coronata ovalis* ANCEY, *Proscheimus arabicus* DESBROCHERS, *Gonocephalum prolixum* (ERICHSON), *Phtora apicilaevis* (MARSEUL).

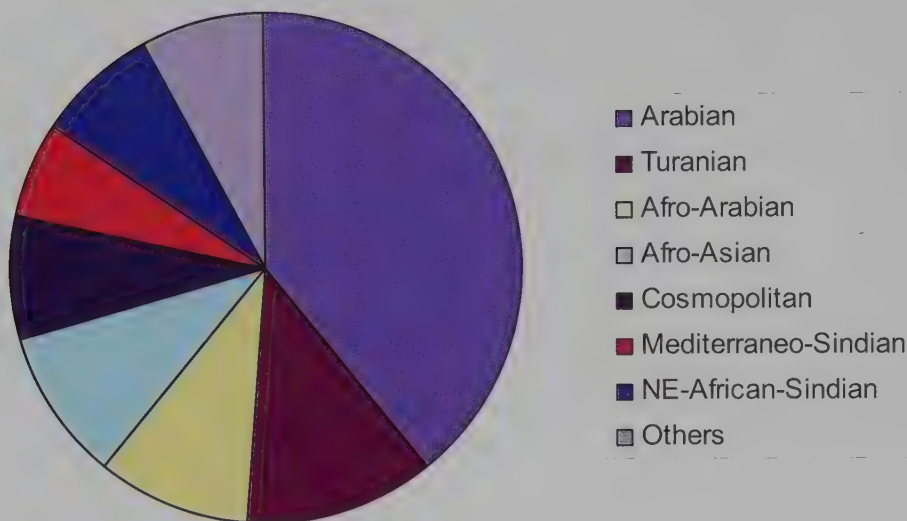
Afro-Asian – 5 species: *Cheirodes* (*Pseudanemia*) *brevicollis* (WOLLASTON), *Clitobius oblongiusculus* (FAIRMAIRE), *Gonocephalum setulosum* (FALDERMANN), *Gonocephalum rusticum* (OLIVIER), *Gonocephalum patruelle* (ERICHSON).

Mediterraneo-Sindian – 3 species: *Cheirodes sardous* GENÉ, *Opatroides punctulatus* BRULLÉ, *Opatroides vicinus* FAIRMAIRE.

Saharo-Turano-Sindian – 1 species: *Cheirodes asperula* (REITTER).

Cosmopolitan – 4 species: *Latheticus oryzae* WATERHOUSE, *Tribolium castaneum* (HERBST), *Alphitobius diaperinus* (PANZER) and *Tenebrio molitor* LINNAEUS.

Endemic (?) – 1 species: *Apsheronellus arabicus* sp. nov.



Number of species

The Arabian taxa are clearly the majority among all the distribution patterns. The Turanian elements arrive in second position. These results are not surprising for a country located in the Arabo-Persian Gulf. Also interesting, is the good proportion of Afro-Arabian and Afro-Asian species, both distribution patterns that frequently appear in the tenebrionid beetles. The Cosmopolitan species are also well represented, but they are probably more abundant in reality than in the sampling we were able to make. It is highly likely that more species of the genera *Palorus*, *Tribolium* and *Alphitobius* will be found in the future, especially in the souk of Doha, where there is an extraordinary stock of a wide variety of stored-products (cereals, flours, cotton, animal skins...).

2. Tenebrionidae – biology and ecology

With more than 300 000 known species, Coleoptera is the most species-rich order of insects of the world. There are currently around 19 000 known species of Tenebrionidae (AALBU *et al.* 2002).

Darkling beetles are world-wide distributed, but a great number of them are xerophilous and they abound in arid and desert areas, where they are the main representatives of the beetles and even of all the insects.

Their food mode is mainly saprophagous. However, the environmental conditions often make them opportunist. Thus, they can be mycophagous

(*Alphitobius*), psichaphagous (*Gnatocerus*, *Palorus* and *Tribolium*), rarely necrophagous and even occasionally predators. Cannibalism is also frequent in the larvae. Several species are synanthropic and some can be considered as, sometimes serious, stored-products pests, mainly for cereals (barley, corn, oat...) and their derivatives (flour). Furthermore, they are able to cause some damage on stored skins, leathers, and sometimes on entomological collections (*Tribolium* spp.). In those cases, they can be of economical importance.

Most of the tenebrionid beetles are nocturnal or crepuscular, especially in arid regions, although a few species can be day active (e.g., *Adesmia* spp.).

In Qatar, nearly all the species of Tenebrionidae are associated with soil and especially with sand. The remaining ones (cosmopolitan species) live in stored products. They can be found from the seashore to the driest places of the inland. No highly-specialised species living in caves have been found in Qatar. Many species, mainly members of the Pimeliinae, have both adapted to life, on the surface and in the sand. Among them, some are living on mobile wind-blown sand dunes (barkhans), whereas others prefer the littoral dunes.

Some species can occasionally be more or less associated with nests of ants (*Mesostena* spp.) or rodents (*Blaps kollarii* SEIDLITZ and *Akis spinosa* (LINNAEUS)).

At least, one species of *Gonocephalum* (*G. rusticum* OLIVIER) has been found in great number in a field of melon, where it can be considered as a moderate pest. The adults and larvae feed essentially on decaying leaves and fruits.

The darkling beetles, like other coleoptera, are less abundant during the summer period that extends from June to September. But there is at least one exception, *Prionotheca coronata ovalis* ANCEY, which seems to be typical of the warmest period. Nevertheless, this insect is strictly nocturnal. On the contrary, *Adesmia* (*Oteroscelis*) *khaliensis* BLAIR is active during the hottest hours of the day in winter.

Interestingly, it appears that the very occasional heavy rainfalls have a disastrous effect on the occurrence of the Tenebrionidae in this region. In such occasions, they literally disappear, hiding themselves sometimes deeply into the ground. In all probability, they would massively reappear a few weeks later, when the conditions get back to normal.

Type of substratum, especially granulometry, is very important for a large number of ground species. It is an even more predominant factor for the larvae of sabulicolous species that live exclusively under the surface, than for the imagos. Size and shape of the sand grains (spherical or polygonal) determine the compaction potentialities of the soil (density) and also the air circulation inside it.

Chemical composition of the ground (e.g., salinity) can play an essential role in the distribution of the Tenebrionidae. This is the case for the halophilous species.

3. Systematics, morphology

Tenebrionidae are Coleoptera (Greek, *koleos* = sheath, and *pteron* = wing), therefore with a complete metamorphosis (holometabolous). That means three very distinct stages of development: larva, pupa, and then adult.

They show buccal appendages of a crushing-type and membranous posterior wings protected at rest by a rigid pair of elytra.

These insects have a great morphological diversity and are also extremely variable in regard to their size and colours. Antennae are usually 11-segmented, but in some cases they can be 10- and rarely 9-segmented. Some can fly, while others are apterous, mainly in desert or arid areas. There are even some blind species, generally endogeans or myrmecophilous ones.

The traditional classification of GEBIEN (1937, 1938–42, 1943–44) has been completely revised by different authors, mainly since the 1980's: SKOPIN (1978), DOYEN & LAWRENCE (1979), DOYEN & TSCHINKEL (1982), DOYEN *et al.* (1989), DOYEN (1993), LAWRENCE & NEWTON (1995), AALBU *et al.* (2002), BOUCHARD *et al.* (2005) and finally AALBU (2006).

This new nomenclature was officialized during the International Symposium in Munich (2002) and recently, in Lyon (2005), that gathered nearly all the international specialists of this family.

Thus, the present catalogue of Tenebrionidae of Qatar follows the classification proposed by BOUCHARD *et al.* (2005) and AALBU (2006), apart for the tribe Platyopini that we consider as an independent entity compared to the Pimeliini. Unfortunately, in spite of the undeniable interest of the concepts developed by these new leanings, it produced in return a great confusion which makes almost impossible now to give a single diagnosis for the whole family. The division into subfamilies and tribes is a typical example: one can look at the keys in volume 2 of *American Beetles* (loc. cit.) to understand how this new classification has become now so hardly transposable into a dichotomic tool-like identification key. In addition, some of the taxonomic changes proposed in this new classification do not find a perfect homology into the Old World fauna. For instance, the inclusion of the former families Alleculidae and Lagriidae within the Tenebrionidae has considerably modified the classification of the darkling beetles.

Fortunately, within the framework of the fauna of Qatar, all the Tenebrionidae representatives correspond to a “traditional” interpretation of the morphological characteristics particular to this family:

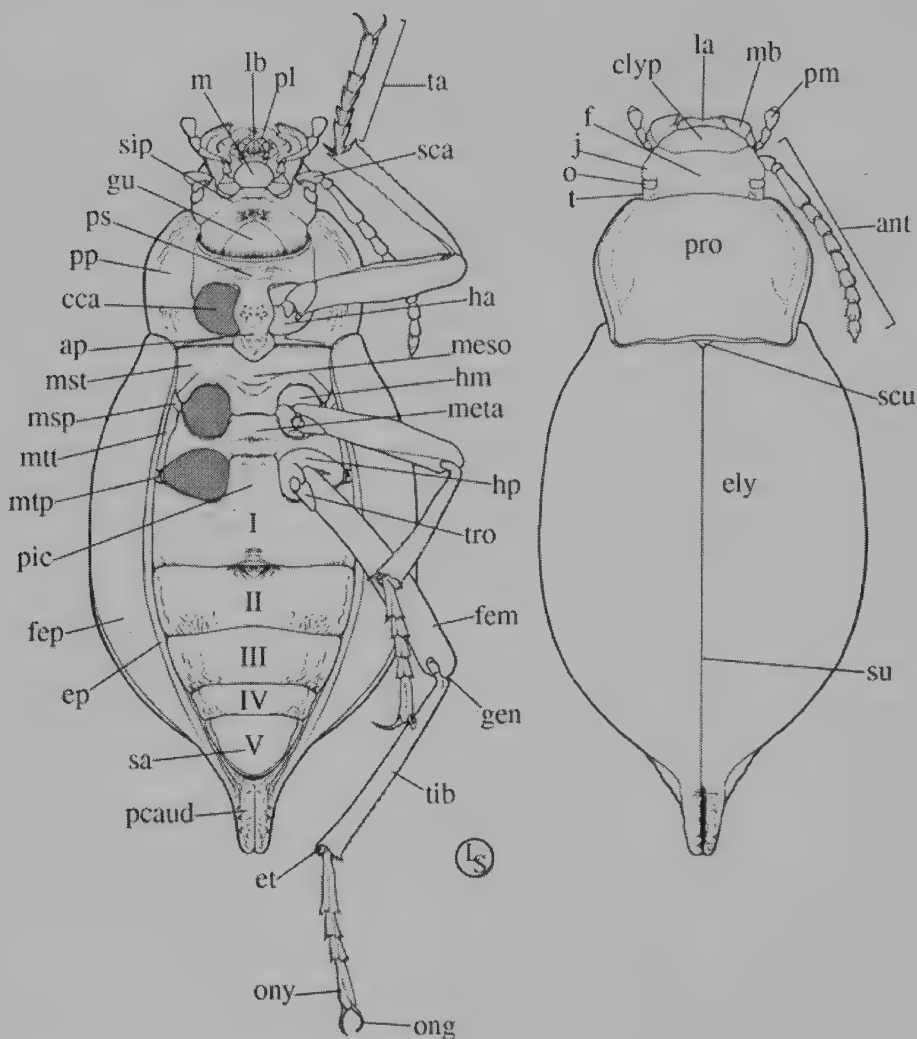
- They are heteromerous, that is to say that their anterior and median tarsi are 5-segmented, while the posterior ones have only 4 segments (tarsal formula 5-5-4).

- The claws are simple and not pectinate.
- Insertion of the antenna, at the level of the 1st segment (the scape), located below the lateral expansion of the genal canthus.
- Procoxal cavities closed.
- Sternites 1–3 of the abdomen welded, while the 4th and the 5th are mobile and free (mating, egg-laying and excretion).
- The body of the ♂♂ copulation-apparatus (also called aedeagus) is of a simple, “vaginate-type”. It is composed of a phallobase, topped by two parameres that build a frame through the opening of which the median lobe slides.

The adaptation to the hard conditions of the arid and desert areas is highly developed. It often led to the disappearance of the membranous wings and the welding of the elytra and the first three abdominal sternites, in order to reduce dehydration. In some cases, elytral cavity is extremely convex (physogastry) to make internal condensation easier (PIERRE 1958). That's the main reason why so many Tenebrionid beetles are apterous. Most of them are also heavily sclerotized and of a dark colour, such as piceous-brown and more often black.

In the case of Qatar and other surrounding countries, the larvae, apart from those of the cosmopolitan food-stored pests and a very few other species as, for example, *Blaps kollarii* SEIDLITZ (MENON & PUTNAM 1988), are still unknown. However, they share the following characters:

- Generally cylindrical and elongate shape (but sometimes short and broad or flattened).
- Clypeo-frontal suture always present.
- Molar apex of the mandibles not cleft, simple; prostheca absent.
- Prothorax typically slightly larger than meso- or metathorax.
- Legs 5-segmented, well developed. Prothoracic ones in ventral position and often more sclerotized than the others, especially in soil dwelling species.
- Spiracles always equipped with a closing system of the atrium, which is composed of a digitate perithreme that prevent substratum particles to penetrate inside the atrial chamber where the trachea are connected (PIERRE, 1958).
- Otherwise, the tenebrionid larvae, except from highly specialised desert-species (e. g. Erodiiini or some Opatrini and Pimeliini), have generally the same appearance as those of the Elateridae (“wireworm-type”). However, they differ from the latter by the labrum, which is articulated and by the presence of a mandibular mola.



Main morphological characters of a Tenebrionidae (*Blaps* sp.): **ant**: antenna; **ap**: prosternal apophysis; **cca**: anterior coxal cavity; **clyp**: clypeus; **ely**: elytron; **ep**: epipleuron; **et**: apical spur; **f**: frons; **fem**: femora; **fep**: false-epipleuron; **gen**: knee; **gu**: gula; **ha**: anterior coxa; **hm**: median coxa; **hp**: posterior coxa; **j**: gena; **la**: labrum; **lb**: labium; **m**: mentum; **mb**: mandible; **meso**: mesosternum; **meta**: metasternum; **mep**: mesepimeron; **mst**: mesepisternum; **mtp**: metepimeron; **mtt**: metepisternum; **o**: eye; **ong**: claw; **ony**: onychium; **pcaud**: caudal extension of elytra; **pic**: intercoxal process of abdomen; **pl**: labial palpus; **pm**: maxillary palp; **pp**: propleuron; **pro**: pronotum; **ps**: prosternum; **sa**: anal sternite; **sca**: scape; **scu**: scutellum; **sip**: preular sulcus; **su**: suture; **t**: tempora; **ta**: tarsus; **tib**: tibia; **tro**: trochanter; **I** to **V**: abdominal sternites.

Subfamilies and tribes composition

According to the most recent phylogenetical reconstruction of the Tenebrionidae family (BOUCHARD *et al.* 2005, AALBU 2006), the five subfamilies present in Qatar are composed of the following tribes:

I. Lagriinae

Belopini (1 genus)

II. Pimeliinae

Erodiini (2 genera)

Zophosini (1 genus)

Epitragini (1 genus)

Tentyriini (11 genera)

Adesmiini (1 genus)

Akidini (1 genus)

Pimeliini (4 genera)

Platyopini (1 genus)

III. Diaperinae

Trachyscelini (1 genus)

Phaleriini (2 genera)

Crypticini (1 genus)

IV. Opatrinae

Leichenini (1 genus)

Melanimini (3 genera)

Opatrini (13 genera)

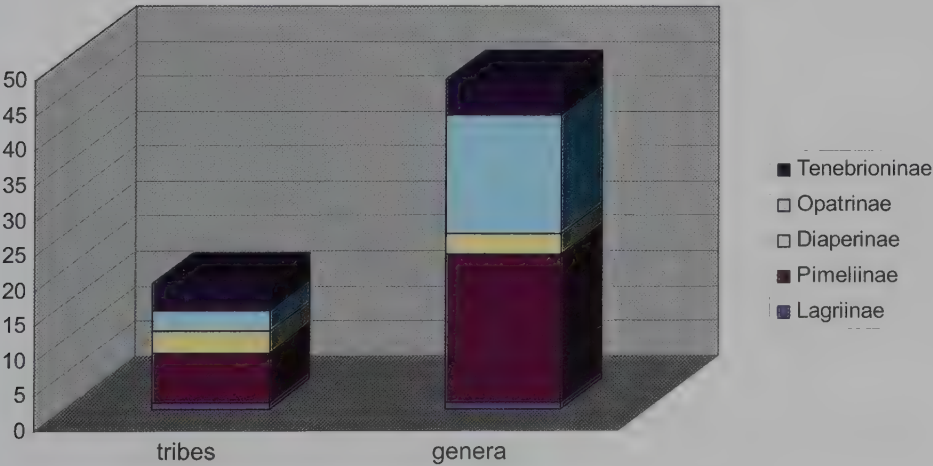
V. Tenebrioninae

Blaptini (1 genus)

Triboliini (2 genera)

Alphitobiini (1 genus)

Tenebrionini (1 genus)



It appears clearly that the Pimeliinae are the majority within the Tenebrionidae of Qatar, both concerning the number of tribes and genera that compose this subfamily. The Pimeliinae are widely distributed around the world, especially in deserts, with the exception of Australia. For example, in the United States, this subfamily is composed of 12 tribes among the 37 world ones (AALBU *et al.* 2002), whereas there are 7 in Qatar, which is a far smaller country.

The Opatrinae (former interpretation) are also well represented at the genus level.

These results are typical of arid regions and desert areas of the Western Palaearctic. If the littoral and halophilous species and also the cosmopolitan and ruderal elements are removed, we globally find the same proportions as those given by PIERRE (1958), which only concern the wind-blown sand dunes of the North-Western Sahara. Thus, in Qatar, 38,8% of the tribes and 44,6% of the genera belong to the Pimeliinae. In Saudi Arabia, where the Tenebrionidae are even more numerous, taken in consideration the far more important surface and the larger diversity of landscapes of this country, proportions remain more or less equivalent: this subfamily represents 35% of all the tribes. On the Socotra Archipelago, about 55% of the tenebrionids are Pimeliinae (SCHAWALLER 2006), while they are 68,5% in the Sinai Peninsula (LILLIG & PAVLIČEK 2003).

In a preliminary list of the insect fauna of Qatar published by ABDU & SHAUMAR (1985), only 11 species of Tenebrionidae were mentioned. Among them, three were obviously misidentified (*Mesostena elegans* SOLIER, *Micipsa* sp. and *Ocnera philistina* REICHE) and two were cited as "sp." (*Zophosis* sp. and *Adesmia* sp.). Within this list, the presence of *Tribolium confusum* JACQUELIN DU VAL, 1868, a cosmopolitan species living in food-stored products, and *Trachyderma hispida* (FORSKÅL), needs confirmation but can be considered as probable.

Now, on the base of the data presented here, there are 51 taxa (species and subspecies) of darkling beetles known from Qatar, of which 47 are documented for the first time. That means that 92% of the total data are new.

II. IDENTIFICATION KEY TO THE TENEBRIONIDAE OF QATAR

The sole purpose of the following key is to provide a useful and simple identification tool. Thus, it is not intended to strictly follow the classification and the world phylogeny of the Tenebrionidae family. This is the main reason why the order of the catalogue is not scrupulously followed. Morphological characters were selected according to the list of present known species of Qatar. So, it must be kept in mind that it can not necessarily be transposable to other region of the globe for the characterization of the different tribes or genera.

Key to the tribes

1. 3rd and 4th abdominal sternites without visible articular membrane on their posterior edge (fig. 1) 2

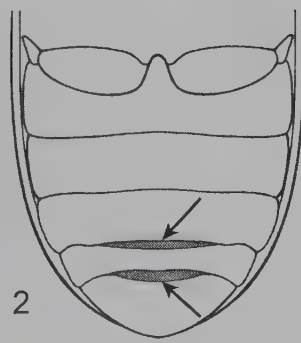
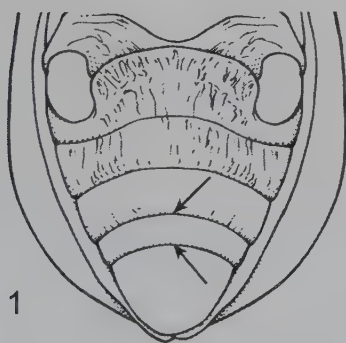


Fig. 1–2. (1) 3rd and 4th abdominal sternites without articular membrane on their posterior edge *Adesmia* sp.; (2) 3rd and 4th abdominal sternites with a visible articular membrane on their posterior edge (*Phaleria* sp.).

- . 3rd and 4th abdominal sternites with a clearly visible articular membrane on their posterior edge (fig. 2) 9

2. Coxal cavities obliquely disposed. Metasternum with a short longitudinal and incomplete basal sulcus, which is furthermore deeply engraved (fig. 3). Scutellum absent. Frons with supraocular carinae above the bilobate eyes. Flattened ovate species **Zophosini**
- . Coxal cavities horizontally disposed. Metasternum without a short longitudinal and incomplete basal sulcus (fig. 4), if (a sulcus is) present (some Tentyriini), then it is generally complete and superficial, weakly (not deeply) engraved **3**

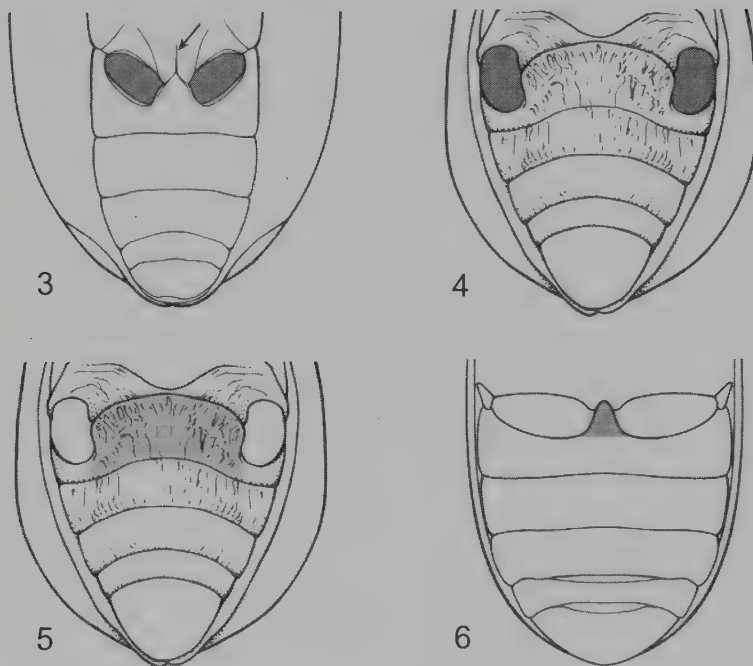


Fig. 3–6. (3) Coxal cavities obliques and metasternum with a short basal sulcus (*Zophosis* sp.); (4) coxal cavities normal and metasternum without basal sulcus (*Adesmia* sp.); (5) intercoxal process of the 1st abdominal segment broad (*Adesmia* sp.); (6) intercoxal process of the 1st abdominal segment narrow (*Phaleria* sp.).

3. Posterior coxae distant, separated by a particularly broad intercoxal process of the 1st abdominal segment (fig. 5). Scutellum not visible. Frons without supraocular carinae **4**
- . Posterior coxae separated by a narrow and often angular intercoxal process of the 1st abdominal segment (fig. 6). If different, then the scutellum is clearly visible and the supraocular carinae are present on both sides of the frons **5**

4. Antenna appearing as 10-segmented, the 11th very short and embedded inside the previous one or reduce to a simple apical button (fig. 7a, 7b). Protibia flattened and sharp, bearing two teeth on the external face, one apical, the other located in median position; internal face bearing long setae (fig. 8) **Erodiini**
- Antennae 11-segmented, the apical segment smaller but free and well differentiated (fig. 7c). Protibiae with a round section, without teeth on the external face and long setae on the internal face **Adesmiini**

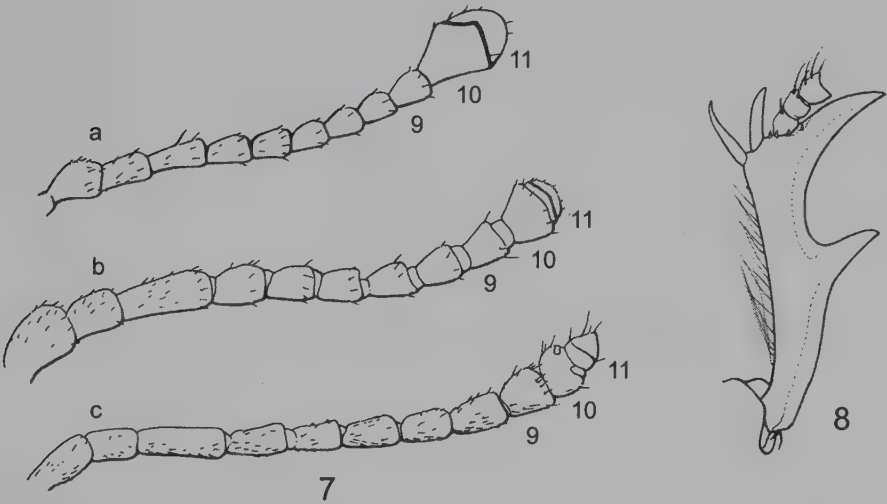


Fig. 7–8. (7a and 7b) Antennae appearing as 10-segmented, the 11th reduced and embedded inside the 10th (Erodiini); (7c) antennae normal, 11-segmented; (8) protibia of an Erodiini (*Apentanodes*).

5. Apterous species, without humeral calli, the elytra knitted together; elytral base usually rimmed. Insects always labrous **6**
- Fully winged species, with humeral calli, the elytra not knitted together; elytral base never rimmed. Insects often pubescent on the upper side and/or on the under side **7**
6. Pronotum transverse, with the sides clearly up-righted and separated from the disc. Each elytron bearing 3 carinae, of which the humeral and the lateral ones are complete, the internal carina is shortened, only distinct on the inclined distal part and prolonged frontward in a series of lined up granules. Posterior angles of pronotum strongly pointed in the ♂♂ (fig. 9) **Akidini**

- The above characters not combined; insects highly variable in shape, dimensions and colour **Tentyriini**

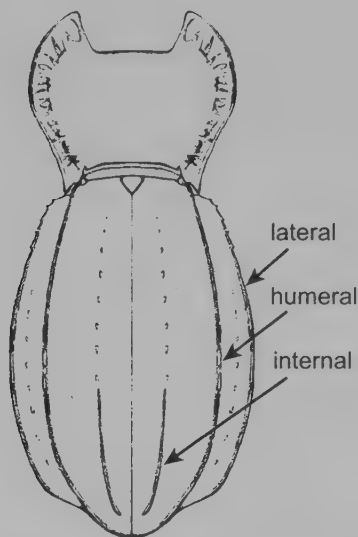


Fig. 9. Pronotum and elytra of *Akis spinosa* (LINNAEUS) showing the shape of the pronotum and the disposition of the carinae (lateral, humeral, internal).

7. Anterior edge of clypeus with a deep U-shaped emargination in the middle (fig. 10); small (3–5 mm), light red-brown to dark piceous coloured. Elytra parallel-shaped, about as broad as the pronotum. Protibiae of the fossorial-type, flattened, with the outer face armed with two strong teeth, a median and an apical one which is as long as or often longer than the corresponding tarsus. Underside of body covered with long erected bristles that are still visible from above. Antennae short, with the distal segments distinctly enlarged and flattened **Melanimini**
- Anterior edge of clypeus not emarginated in the middle, but truncate or salient in a triangular or rounded lobe **8**
8. Posterior angles of the abdominal sternites normal, not angularly produced. All the femorae claviform, especially the anterior ones (fig. 11). Clypeo-genal suture nearly complete, slightly interrupted in the middle (fig. 12). Small size (6 mm), shiny red-brown coloured, glabrous and parallel. Pronotum much longer than broad, with a small indentation on the outer face of the posterior angles. Elytra with rows of line-up punctures, the base, on both sides at the shoulder's level (humeral calli), with a small very short salient tooth **Belopini**

- Posterior angles of the abdominal sternites, especially the 3rd and the 4th, angularly produced outwards and not in line with the base of the following segment (also visible from above) (fig. 13). Anterior femorae markedly less claviform. Clypeo-genal suture nearly completely obliterate and reduced to a small line on both sides of the clypeus. Brown-black, with sparse, layed down on the tegument, tuft of yellow pilosity, arranged in nebulosities all over the upper surface of the body, or red-brown, mat and glabrous **Epitragini**
- 9. Anterior margin of clypeus with a deep V-shaped emargination in the middle (fig. 14) **10**
- Anterior edge margin of clypeus normal, rounded, truncate or slightly concave **11**

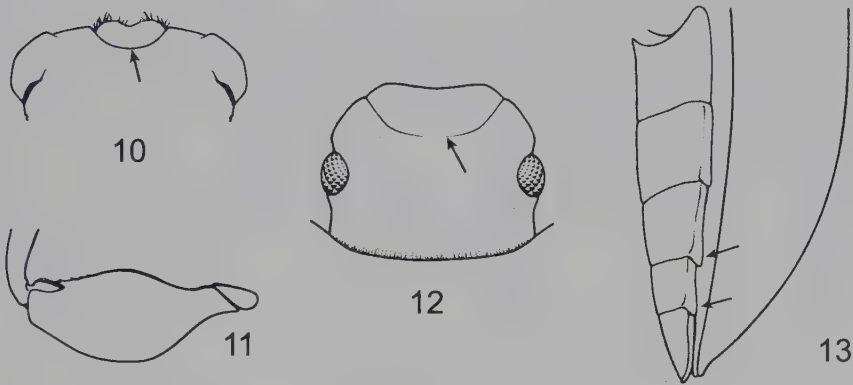


Fig. 10–13. (10) Anterior edge of the clypeus showing the distinctive median U-shaped emargination (*Cheirodes* sp.); (11) claviform femora (*Centorus* sp.); (12) clypeo-genal suture interrupted in the middle (*Centorus* sp.); (13) posterior angles of the abdominal sternites (2nd to 4th) produced outwards (Epitragini).

- 10. Eyes bearing sensillae between the ommatidia. Antennae with a distinct 4-segmented distal club. Small insects (less than 5 mm) covered with a ground layer of scales applied on the integument, forming a black, grey and brown mottling, and a second layer of erected conical sensillae, especially visible at the level of the lateral contour of the pronotum and elytra **Leichenini**
- Eyes glabrous. Insects of variable size, with the body either glabrous or covered with sensillae, but never with a solid ground layer of scales . . . **Opatrini**
- 11. External face of protibia strongly dilated toward the apex, forming a more or less elongate rounded lobe (fig. 16) **12**
- External face of protibia not so dilated toward the apex and not, or only slightly enlarged, without outer distal lobe **13**

12. Antenna short, with a distinct 6-segmented distal club, of which the last one is very small, embedded into the precedent segment and sometimes barely visible (fig. 15). First segment of posterior tarsus hypertrophied, considerably dilated in comparison with the three next ones. Small convex ovoid-shaped fossorial insects (less than 5 mm) of a testaceous-brown colour **Trachyscelini**
- Antenna long, progressively and moderately enlarged toward the apex. First segment of the posterior tarsi not broader than the three next ones. Relatively big insects (more than 5 mm) testaceous and depigmented **Phaleriini**
13. Body pubescent above, at least on the sides and the declivity of the elytra, as well as on the lateral margins of the pronotum, covered with erected and/or laid down pilosity **14**
- Body entirely glabrous above **16**
14. Small size (5–6 mm), body ovate, totally covered with a dense, short and laid down pubescence, forming an irregular mottling of brown over a yellowish-grey background. Pronotal base as broad as elytral one, and then narrowed frontward in a regular curve **Crypticini**
- Size larger (>10 mm) **15**
15. Outer margin of protibia armed with a series of (in general 4–5) strong teeth. Integument entirely covered with a very dense layer of light-grey scales **Platyopini**

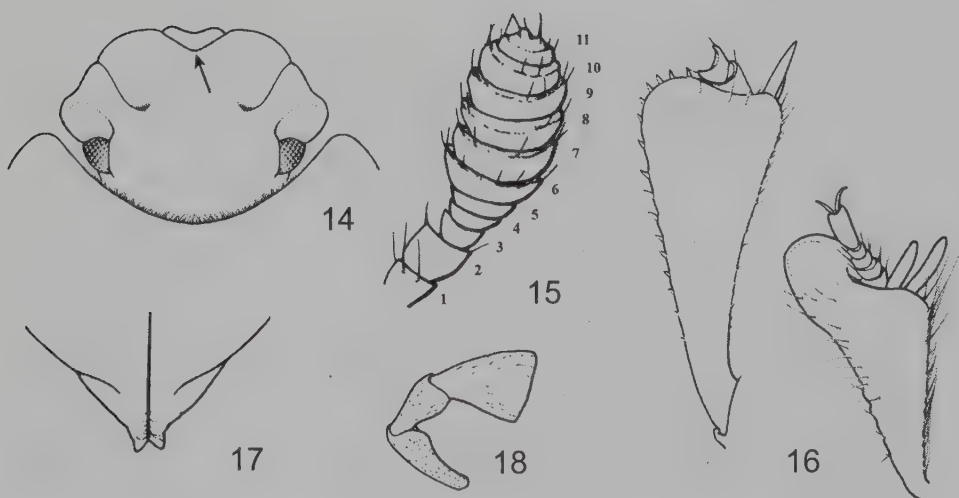


Fig. 14–18. (14) V-shaped emargination in the middle of the anterior margin of the clypeus (Opatrini); (15) antenna (Trachyscelini); (16) external face of protibia dilated and lobate at the apex (Phaleriini and Trachyscelini); (17) caudal extension of elytra (*Blaps* sp.); (18) securiform maxillary palp (*Blaps* sp.).

- Outer margin of protibia inermous, with only the distal angle sometimes produced (*Pimelia*). Integument more or less pubescent, but never entirely covered with a very dense layer of grey scales **Pimeliini**
- 16. Large species (>25 mm), black, convex. Elytral apex with a caudal extension, which is divided in two small pointed tips separated by a sutural angular hiatus (fig. 17). Last segment of the maxillary palp securiform (fig. 18). Antennal segments 8–10 subspherical, the 11th conical (fig. 19) . . . **Blaptini**
- Relatively smaller species (<18 mm), red-brown to dark brown, elytra without caudal extension at the apex. Last segment of maxillary palp normal, not securiform. Antenna regularly enlarged toward the apex or with a distal club **17**

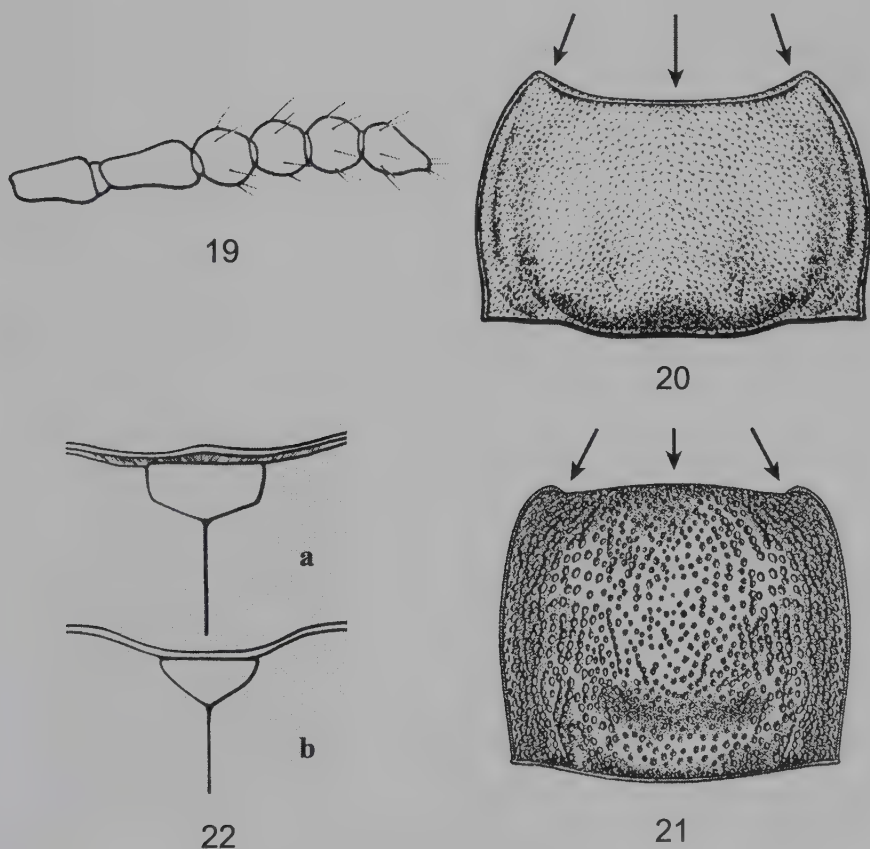


Fig. 19–22. (19) Antennal segments 8–11 (apical ones) (*Blaps* sp.); (20) anterior margin of pronotum emarginate and concave (*Tenebrio* sp.); (21) anterior margin of pronotum (*Triboliini*); (22) (a) scutellum pentagonal (*Tenebrionini*), (b) scutellum normal (*Alphitobiini*).

17. Anterior margin of pronotum emarginate and concave, the anterior angles salient (fig. 20) **18**
- Anterior margin of pronotum truncate, the anterior angles rounded and not or slightly prominent (fig. 21) **Triboliini**
18. Anterior margin of pronotum completely rimmed, the sides explanate. Scutellum pentagonal (fig. 22a). ♂♂ Protibiae curved. Posterior tibiae inermous on their external faces. Larger size (14–17 mm) **Tenebrionini**
- Rim of the anterior margin of pronotum interrupted in the middle, the sides regularly convex toward the edges, not explanate. Scutellum normal (fig. 22b). ♂♂ Protibiae not dimorphic. Posterior tibiae with some small spines on their external faces. Smaller size (6.5–7.0 mm) **Alphitobiini**

Key to the genera and species¹

Erodiini

1. Clypeus well separated from the frons, in the rear, by a fine and curved transversal carina ***Apentanodes***
- Clypeus not separated from the frons by a transversal carina ***Erodius***

Up to now, only one species belonging to each of these genera is known for the fauna of Qatar: *Apentanodes arabicus* (KIRCHSBERG) and *Erodius* (*Eodirosis*) *sauditus* KASZAB.

Zophosini

A single species has been collected: *Zophosis* (*Septentriophosis*) *complanata* SOLIER.

Epitragini

Only one Qatari representative for this tribe: *Imatismus* (*Curimosphena*) *arabicus* KASZAB.

¹ Here also, only the genera and species presently known from Qatar are listed. However, some species not yet inventoried which probably occur in Qatar, maybe indicated in this subsection, but not in the following chapter (III. Catalogue).

At least one species of the genus *Cyphostethe* MARSEUL should live in Qatar, even if, up to now, no specimen has been collected.

Tentyriini

The different genera of this tribe can be recognized with the following key

1. Eye nearly entirely divided by a lateral rearwards expansion of the gena, leaving only a single row of ommatidia at the narrowest point (fig. 23) ***Hyperops***
- Eye complete (fig. 24) or partially divided by a lateral frontward expansion of tempora, leaving more than a single row of ommatidia at the narrowest point (fig. 25) **2**

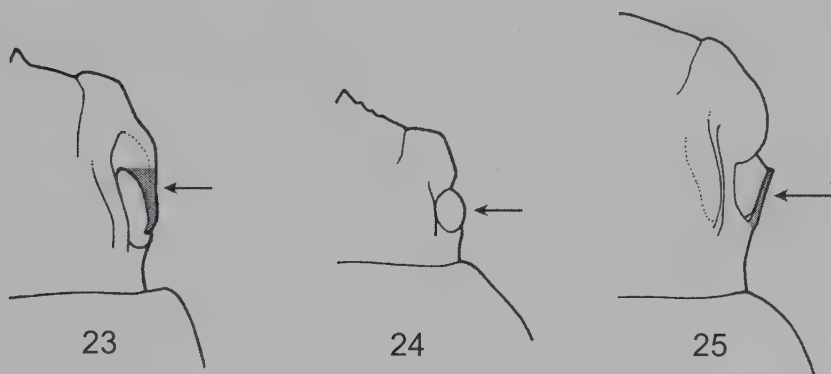


Fig. 23–25. (23) Eye nearly entirely divided by a lateral rearwards expansion of the gena (*Pachycera*); (24) eye complete and free; (25) eye partially divided by a lateral frontwards expansion of tempora (*Mesostena*).

2. Eyes free (fig. 24), reniform or oval, without any lateral frontwards expansion of temporae **3**
- Eyes partially divided by a lateral frontwards expansion of temporae, so that, the outer posterior margin of eye makes an angle with the apical anterior edge of temporal lobe (fig. 25) **4**
3. The two apical spurs of protibia hypertrophied, digitate, far longer than the three first segments of the corresponding tarsus taken together (fig. 26). First anterior tarsomere prolonged into an apical tooth underneath (fig. 26a). Epistome broadly triangular in the middle ***Prochoma***
- The two apical spurs of protibia normal, shorter, at most as long as the two first segments of the corresponding tarsus taken together. First anterior tarsomere without an apical tooth underneath **5**

5. Upper face of the right mandible without median tooth. Punctuation of the pronotum longitudinally strigose on the sides *Girardius*
- Upper face of the right mandible with a strong median tooth. Punctuation of pronotum simple and sparse, even on the sides 6
6. Clypeus with a median tooth in the middle. Transverse gular sulcus present and very deeply impressed, so that it is clearly visible in side view *Microdera (Tentyrodera)*
- Clypeus lobate anteriorly, but without median tooth in the middle. Gular sulcus absent *Tentyrina*
4. External margin of protibia sharp, with the outer distal angle produced and very acute (fig. 27). Posterior face of anterior femora ciliate 7
- External margin of protibia rounded, not sharp, with the outer distal angle not produced, as if the tibiae were simply cut at the apex (fig. 28). Posterior face of anterior femora not ciliate 8

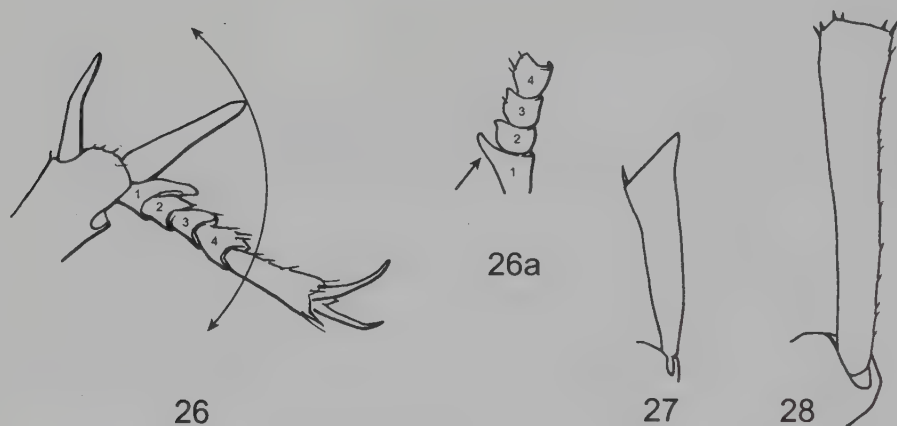


Fig. 26–28. (26a) Anterior tarsomere prolonged into an apical tooth underneath (*Prochoma*); (26) apical spurs of protibia hypertrophied, (*Prochoma*); (27) external margin of protibia sharp with the outer distal angle produced (*Falsocatomulus*); (28) external margin of protibia rounded, with the outer distal angle not produced.

7. Antenna glabrous. Anterior margin of pronotum completely rimmed. Matt dark piceous brown, with the antennae, palpi and legs red-brown *Falsocatomulus*
- Antenna pubescent. Anterior margin of pronotum unrimmed. Entirely castaneous brown, with head and pronotum darker *Ammogiton*
8. Pronotum cordiform, with the sides convergent rearwards and the base considerably narrower than the anterior margin. Pronotal anterior angles blunt the posterior ones nearly obsolescent. Clypeus barely curved anteriorly, with

- small indentations on the front edge, or with an asymmetrical tooth always directed to the right. All the femorae strongly clavate *Mesostena*
- Pronotum not cordiform, with the sides subparallel or convergent frontwards and the base always wider than the anterior margin. Pronotal angles well developed, especially the anterior ones which are acute. Clypeus always triangularly protruding, even slightly, with a small median tooth in the middle. Femorae normal *Oxycara*

All the genera of the tribe Tentyriini are represented by a sole Qatari species, with the exception of *Mesostena* Eschscholtz and *Oxycara* SOLIER (see chapter “III. Catalogue”).

The *Mesostena*-species can be distinguished as follow

1. Anterior margin of the clypeus with a median asymmetrical tooth (fig. 29), always directed to the right, on the anterior margin *Mesostena puncticollis* SOLIER

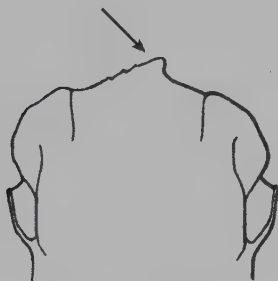


Fig. 29. Anterior margin of the clypeus with a median asymmetrical tooth (*Mesostena puncticollis*).

- Anterior margin of the clypeus without median asymmetrical tooth (fig. 25), but with small indentations on the front edge *Mesostena angustata* subsp. *deserticola* nov.

Key to the *Oxycara*-species of Qatar

1. Pseudoepipleural carina of elytra transversally micro-grooved, this, associated with the modified structure of the corresponding internal face of posterior femorae, forms the two complementary parts of a stridulatory-apparatus (subg. *Symphoxycara* KOCH) *Oxycara* (*Symphoxycara*) *hansbremeri* LILLIG

- . Pseudoepipleural carina of elytra simple, smooth, not modified (subg. *Oxycara* SOLIER) *Oxycara* (s. str.) *buettikeri* KASZAB

Adesmiini

Key to the *Adesmia* species of Qatar

- 1. Posterior femora strongly compressed laterally, sharp and blade-like (*Oteroscelis* SOLIER) *Adesmia* (*Oteroscelis*) *khaliensis* BLAIR
- . Posterior femorae not compressed and with an oval or round section *Adesmia* (*Macradesmia*) *cancellata* (KLUG)

Akidini

A sole representative of this tribe is known at the moment from Qatar: *Akis spinosa* (LINNAEUS).

Platyopini

One species: *Paraplatyope arabica* subsp. *arabica* (BLAIR).

Pimeliini

The different genera of this tribe can be separated with the following key

- 1. Outer face of protibia sharply carinate, especially toward the distal angle. Median and posterior tibia with a triangular section in the middle, the posterior (upper) face flattened and covered with fine golden-yellow tomentose hairy-scales on the ground. Head and pronotum without long erected hair. Each elytron with four denticulate costae (one lateral, one humeral and two internal) of which the first inner one is smooth on the anterior half *Pimelia*
- . All the tibiae with an oval section. Body entirely covered above with long erected hair. Elytra without costae, only with longitudinal rows of granules 2
- 2. Sides of elytra (periphery) and inner face of median and posterior tibiae spiked with long spines *Prionothea*

- Sides of elytra with small denticulate granules. Median and posterior tibiae without spines **3**
- 3. Pronotum and abdominal segments covered with a double pubescence: a first layer of very dense golden-grey hair applied to the ground-tegument and a second one of longer and erected hair originating from granules. Legs, especially the tibiae, densely and regularly covered with long erected hair. Prosternal apophysis posteriorly produced into a short tooth well visible in side view (fig. 30) ***Trachyderma***
- Pronotum and abdominal segments covered with a simple pubescence composed of long erected hair. Legs mostly covered with short erected hair, only longer from place to place. Prosternal apophysis posteriorly prolonged into a long thickened tooth in side view (fig. 31) ***Thriptera***

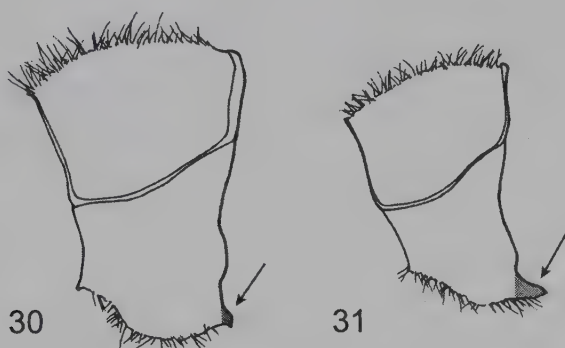


Fig. 30–31. (30) Prosternal apophysis (*Trachyderma*); (31) prosternal apophysis (*Thriptera*).

At present, each genus is represented by a single species in Qatar:

Pimelia arabica KLUG

Prionothea coronata ssp. *ovalis* ANCEY

Trachyderma parvicollis (BAUDI)

Thriptera kraatzi HAAG-RUTENBERG

Blaptini

Only one Qatari representative: *Blaps kollarii* SEIDLITZ.

Leichenini

One species: *Apsheronellus arabicus* sp. nov.

Melanimini

Only one genus of this tribe is known from Qatar: *Cheirodes* GÉNÉ

Key to the *Cheirodes* species

1. Antennae 11-segmented 2
- Antennae 10-segmented
..... *Cheirodes (Pseudanemia) brevicollis* (WOLLASTON)
2. Clypeus and frons rasp-like punctate and setigerous tuberculate. Anterior edge of clypeus finely denticulate on both sides of the median U-shaped impression *Cheirodes (Histiae) asperula* (REITTER)
- Clypeus and frons punctate, the punctuation sometimes confluent anteriorly, but never setigerous tuberculate. Anterior edge of clypeus smooth on both sides of the median U-shaped impression
..... *Cheirodes (Cheirodes) sardous* GÉNÉ

Opatrini

Key to the genera

1. Upper face of protibia with a distal patch of golden-yellow hair 2
- Upper face of protibia simple, without distal patch of golden-yellow hair 3
2. Apterous species with a very short metasternum. Shoulders rounded, without distinct humeral callus; body glabrous above. Large species, size up to 5 mm *Dilamus*
- Fully winged species with a long metasternum. Humeral calli well developed; body finely and sparsely pubescent above. Small species, size about 3 mm *Prodilamus*
3. Protibia obviously enlarged apically and wider than the four first segments of the corresponding tarsus (fig. 32). Small (3.5–4.0 mm), elongate and parallel-shaped species of a piceous or red-brown colour *Proscheimus*
- Protibia not so enlarged apically, always shorter than the four first segments of the corresponding tarsus 4
4. Body distinctly and overall pubescent above 5
- Body glabrous 6
5. Pronotum covered with fine granules, not punctate. Upper surface hairy, the short bristles lined up in rows on the intervals of elytra *Gonocephalum*
- Pronotum punctuate over a leather-like micro-shagreened ground surface, not granulate. Body finely pubescent *Clitobius*

6. Eyes completely divided by lateral rearwards expansions of the genae (fig. 33) *Opatroides*
- Eyes not completely divided by lateral rearwards expansions of the genae, leaving some free rows of ommatidia (fig. 34) *Penthicus*

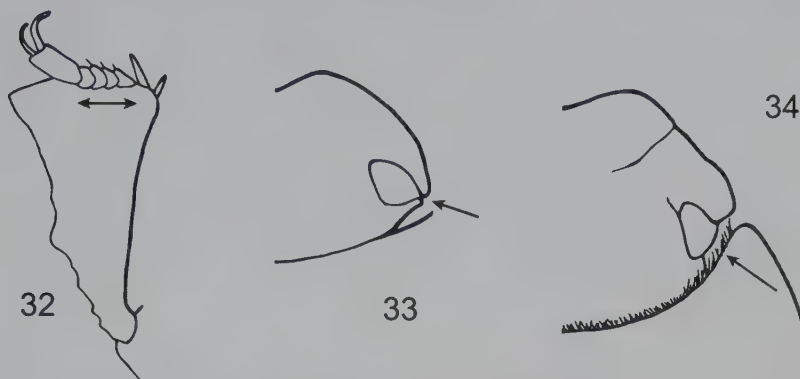


Fig. 32–34. (32) Protibia enlarged apically (*Proscheimus*); (33) eye completely divided (*Opatroides*); (34) eye not completely divided (*Penthicus*).

With the exception of *Gonocephalum* SOLIER and *Opatroides* BRULLÉ, all the genera of Opatridini are represented by only one species in Qatar:

Dilamus arabicus KASZAB
Prodilamus mandli (KASZAB)
Penthicus (*Penthicus*) *oblongopunctatus* (REITTER)
Proscheimus arabicus DESBROCHERS
Clitobius (*Clitobius*) *oblongiusculus* (FAIRMAIRE)

Key to the *Gonocephalum* species²

1. Humeral angle strongly developed and triangularly protruding outside the lateral contour of elytra (fig. 35). Pronotum strongly transverse with the disc convex and well separated from the broad flattened explanation of the sides. The largest *Gonocephalum*-species of Qatar (pronotal width 5.0–6.5 mm) *consobrinum* BLAIR
- Humeral angle normal and not obviously protruding outside the lateral contour of elytra. Pronotum less transverse (maximum pronotal width: 4 mm),

² Specimens of this genus must be cleaned with soap and a soft brush in order to remove the mixture of dust and wax fixed to the cuticula, before any attempt to identify them.

- with the disc more or less convex, but not so widely separated from the sides 2
2. Rearest portion of gena (fig. 36a) shorter than the longest longitudinal section of the eye (fig. 36b) 3
- . Rearest portion of gena (fig. 37a) equivalent or larger than the longest longitudinal section of the eye (fig. 37b) 4

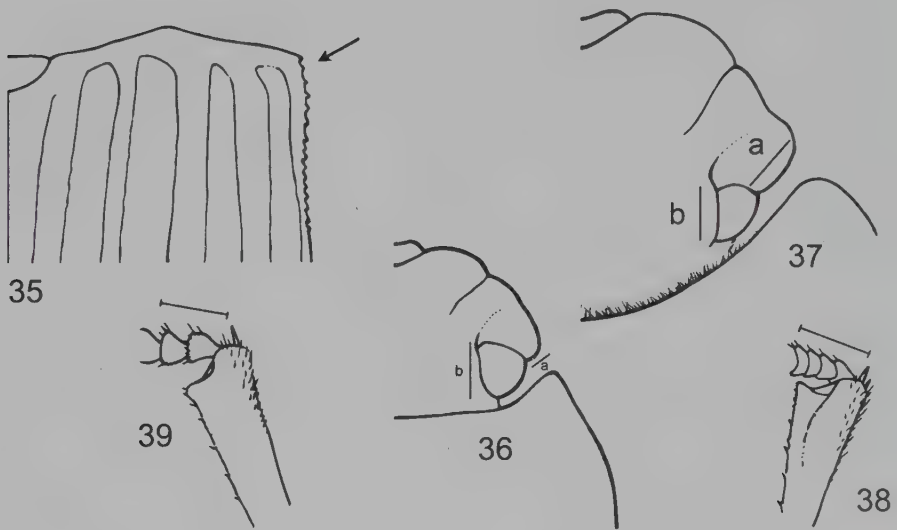


Fig. 35-39. (35) Humeral angle strongly developed and triangularly protruding outside the lateral contour of elytra (*Gonocephalum consobrinum* BLAIR); (36) rearest portion of gena (a) shorter than the longest longitudinal section of the eye (b); (37) rearest portion of gena (a) equivalent or larger than the longest longitudinal section of the eye (b); (38) anterior margin of protibia (*Gonocephalum prolixum* ERICHSON); (39) anterior margin of protibia (*Gonocephalum rusticum* OLIVIER).

3. Anterior margin of protibia at least as broad as the three first segments of the corresponding fore-tarsi (fig. 38). Size smaller (in average 7.5-8.0 mm). ♂♂ with the onychium of the fore-tarsi with a strong external tooth and the meso- and metatibiae fitted with a small tooth on the inner face of distal third *prolixum* ERICHSON
- . Anterior margin of protibia almost as wide as the two first segments of the corresponding fore-tarsi (fig. 39). Size larger (in average 9-10 mm). ♂♂ with the onychium of fore-tarsi, meso- and metatibiae simple, not dimorphic *rusticum* OLIVIER

4. Base of pronotum with two oblique and rearwards convergent impressions on both sides of the middle *patruelle* ERICHSON
- . Base of pronotum different, without any oblique and rearwards convergent impressions on both sides of the middle **5**
5. Anterior margin of protibia as broad as the four first segments of the corresponding fore- tarsi. Pronotum widest in front of the middle, the lateral outline strongly sinuate before the posterior angles that consequently appear salient. Size small, around 6 mm *setulosum* FALDERMANN
- . Anterior margin of protibia as broad as or slightly broader than the two first segments of the corresponding fore-tarsi. Pronotum widest in the basal half of its length, before the middle; the lateral outline weakly sinuate before the posterior angles. Size large, averaging 9–10 mm *besnardi* KASZAB

Key to the *Opatroides* species of Qatar

1. Anal sternite of abdomen (5th visible) flat, not swollen and abruptly sloped downwards just before the marginal fold (fig. 40a, 40b). Mentum longer than broad (fig. 41). Pronotum widest in its anterior half, then, the lateral contour narrowed frontwards and subparallel toward the posterior angles (fig. 42) *Opatroides punctulatus* BRULLÉ
- . Anal sternite of abdomen (5th visible) distinctly swollen and abruptly sloped downwards just before the marginal fold (fig. 43). Mentum as broad as long (fig. 44). Pronotum widest just up to the level of the posterior angles, then, the lateral contour narrowed in curved line to the anterior angles (fig. 45) *Opatroides vicinus* (FAIRMAIRE)

Trachyscelini

A single species: *Trachyscelis litoralis* sp. nov.

Triboliini

There are only two known representatives of this tribe in Qatar: *Latheticus oryzae* WATERHOUSE and *Tribolium castaneum* (HERBST). Probably, more *Tribolium* species will be found in the future, especially in stored products.

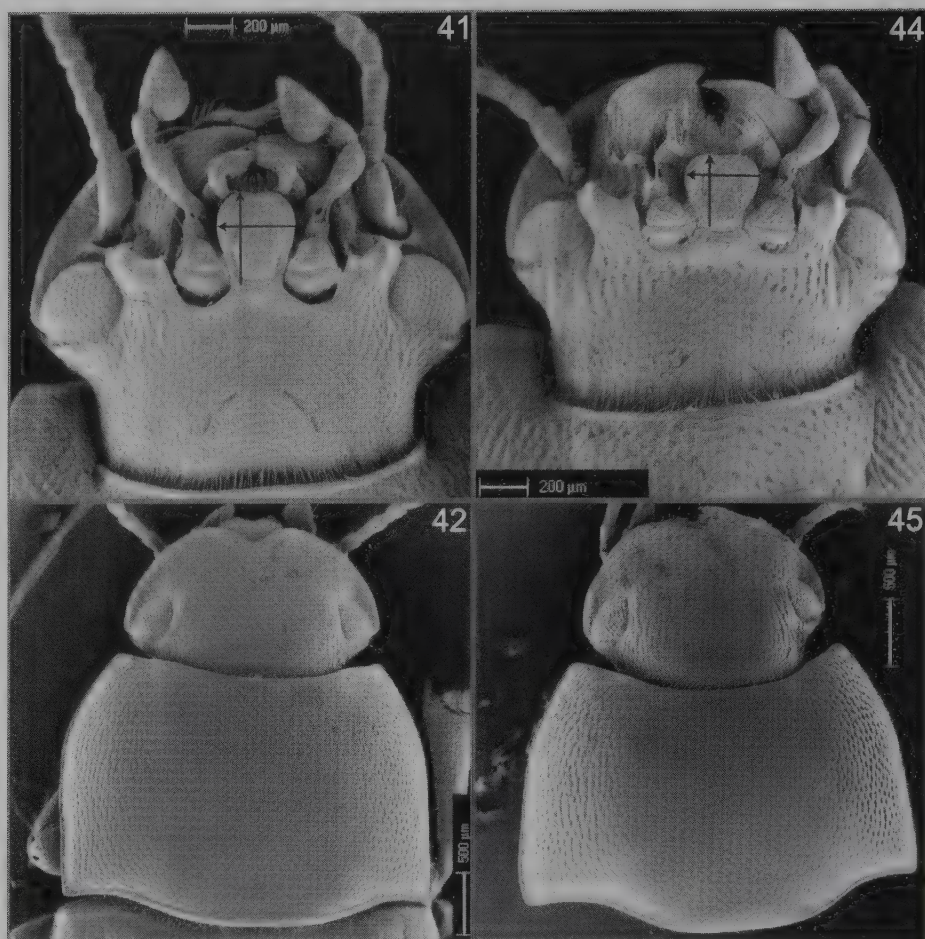


Fig. 41–42, 44–45. (41) Mentum longer than broad (*Opatroides punctulatus* BRULLÉ); (42) pronotum shape (*Opatroides punctulatus* BRULLÉ); (44) mentum as broad as long (*Opatroides vicinus* (FAIRM.)); (45) pronotum shape (*Opatroides vicinus* (FAIRM.)).

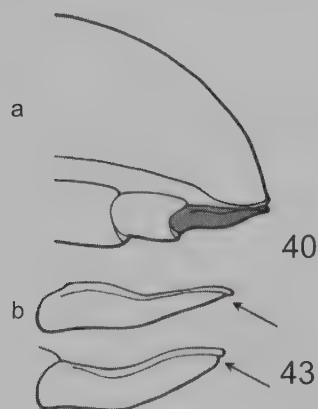


Fig. 40, 43. (40) Anal sternite of abdomen (5th visible) in lateral view (*Opatroides punctulatus* BRULLÉ); (40b) anal sternite of abdomen in lateral view (*Opatroides punctulatus* BRULLÉ); (43) anal sternite of abdomen (5th visible) in lateral view (*Opatroides vicinus* (FAIRM.)).

Identification key

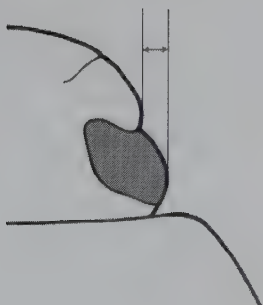
1. Antennae short, with moderately compact 5-segmented distal club, of which the last (apical) segment is truncate. Epistome obviously long, about half-size of the dorsal surface of head. Average length 2.5–3.0 mm. Integument orange, shiny *Latheticus oryzae* WATERHOUSE
- Antennae normal, longer, with moderately compact 3-segmented club, of which the last (apical) segment is oval, not truncate. Epistome shorter, with a maximum length of $\frac{1}{3}$ of the dorsal surface of head. Average length 3.5 mm. Integument reddish brown, dull *Tribolium castaneum* (HERBST)

Alphitobiini

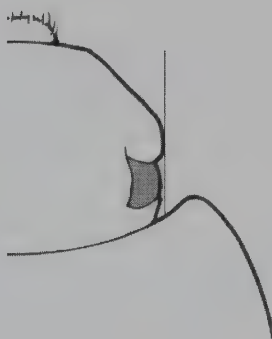
Alphitobius diaperinus (PANZER), a world-wide distributed species in stored products and animal food.

Tenebrionini

Until now, only the cosmopolitan *Tenebrio molitor* LINNAEUS has been found in Qatar.



46



47

Fig. 46–47. (46) eye convex and more salient laterally than the genal canthus (seen from above) (*Phaleria* sp.); (47) Eye barely convex, laterally at most at the same level than the genal canthus (seen from above) (*Phthora* sp.).

Phaleriini

Key to the genera

1. Pronotum with the base broader than the anterior margin. Eyes convex and more salient laterally than the genal canthi (seen from above) (fig. 46). Larger (5.5–8.0 mm), ovoid-shaped insects of a light testaceous colour *Phaleria*
- . Pronotum with the anterior margin broader than the base. Eyes barely convex or nearly flat, laterally at most at the same level than the genal canthi (seen from above) (fig. 47). Smaller (3–5 mm), elongate and parallel species of a red-brown to light piceous colour *Phthora*

Only one species of *Phaleria* has been found in Qatar: *Phaleria* (*Epiphaleria*) *prolixa* FAIRMAIRE.

Key to the *Phthora* species

1. Elytral striae becoming obsolescent from the level of the apical quarter of elytra backward, even the first inner one disappears *Phthora apicilaevis* (MARSEUL)
- . Elytral striae, especially the first inner one, still visible and well defined up to the apex *Phthora salinae* sp. nov.

Crypticini

Only one representative: *Pseudoseriscius griseovestis* (FAIRMAIRE).

Belopini

Nowadays, only *Centorus csikii* ssp. *bagdadensis* REITTER is known from Qatar.

Some other species will probably be found in the future.

III. CATALOGUE OF THE TENEBRIONIDAE OF QATAR

TENEBRIONIDAE LATREILLE, 1802

ERODIINI BILLBERG, 1820

Apentanodes REITTER, 1914

REITTER, 1914, Deutsche Ent. Zeitschr.: 46, 53.

Apentanodes arabicus (KIRCHSBERG, 1877) (pl. 1, fig. 1)

Arthrodeis arabicus KIRCHSBERG, 1877, D. Ent. Zeitschr., XXI (1): 204.

Al Jemaliya: Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 27.IV.2005, M. Martinez; id., 6.VI.2004, L. SOLDATI.

Al Wakra: Al Kharrarah, 1,5 km N of the village, 1.VI.2004, beer pitfall trap, L. SOLDATI & C. COCQUEMPOT; Trainah, 24.IV.2004, M. MARTINEZ.

Jeryan al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 25.XI.2001, in sandy ruts, C. COCQUEMPOT.

Mesaieed: Mesaieed (Umm Said)[®], Sealine Beach Resort, 2.IV.2002, pitfall traps, M. MARTINEZ; Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI.

Distribution. Known from Saudi Arabia and Oman. The subspecies *edomitus* KOCH, 1940 occurs in SW Jordan.

Erodius FABRICIUS, 1775

FABRICIUS, 1775, Syst. Ent.: 258.

Erodius (Eodiosis) sauditus KASZAB, 1981 (pl. 1, fig. 2)

Erodius (Diosis) sauditus KASZAB, 1981, Fauna of Saudi Arabia, 3: 310.

Jeryan al Batna: Nakhlal al Orai area, palm trees plantations, near the Saudi Arabian border, SW Qatar, 31.III.2004, K. MARDINI.

Distribution. This insect lives in sand dunes and seems to appear only in spring. It occurs in Southern Qatar, near the Saudi Arabian border. Described from Saudi Arabia. The populations of this *Erodius* in Qatar may best correspond to the subsp. *costatissimus* KASZAB, also known from Saudi Arabia (Eastern and Najran Provinces), Yemen, Oman and United Arab Emirates (LILLIG 1994). The subspecies *insularis* KASZAB, from Bahrain, is very similar to the type.

ZOPHOSINI SOLIER, 1834

Zophosis LATREILLE, 1802

LATREILLE, 1802, Hist. Nat. Crust. et Ins., 10: 167.

Zophosis (Septentriophosis) complanata SOLIER, 1834
(pl. 1, fig. 4)

Zophosis complanata SOLIER, 1834, Ann. Soc. ent. Fr., 3: 626.

Al Jemailiya: Al Jemailiya al Naeem, about 5 km NW of the village, 19.V.2003, K. MARDINI.

Al Rayyan: Sailiyah Lake[®], 10.I.2004, K. MARDINI; Al Sheehaniyah, Al Khaiarin Botanical Reserve, 17.IV.2005, K. MARDINI.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ; Al Kharrarah, 1,5 km N of the village, 1.VI.2004, beer pitfall traps or running fast on the ground in the morning, L. SOLDATI & C. COCQUEMPOT.

Diurnal insect that runs very fast in zigzag on the surface of the ground.

Distribution. Egypt to western Iran (PENRITH 1984).

EPITRAGINI BLANCHARD, 1845

Imatismus DEJEAN, 1834

DEJEAN, 1834, Catalogue, 202.

Imatismus arabicus KASZAB, 1981
(pl. 1, fig. 3)

Himatismus (Curimosphena) arabicus KASZAB, 1981, Fauna Saudi Arabia, 3: 324.

Al Jemailiya: Al Nasraniyah, NW of the village, small hills with trees and bushes, 10.III.2003, G. SAMA.

Distribution. Species described from Yemen and Saudi Arabia and so far, only known from these countries (KASZAB 1981). First citation for Qatar.

TENTYRIINI ESCHSCHOLTZ, 1831

Prochoma SOLIER, 1835

SOLIER, 1835, Ann. Soc. ent. Fr., 4: 393.

Prochoma (Oxypistoma) bucculenta KOCH, 1940

(pl. 2, fig. 1)

Prochoma (Oxypistoma) bucculenta KOCH, 1940, Mitt. Münch. Ent. Ges., 30 (1): 260.

Al Jemailiya: Dohat al Husain strait, NE coast, seaside, about 15 km NW of Al Jemailiya al Naeem, 5.III.2003, C. COCQUEMPOT; Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Al Khor: Al Khor area, west side of Ras al Matbakhah (mangrove), 4.XII.2003, M. MARTINEZ.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, L. SOLDATI & C. COCQUEMPOT; id., 17.IV.2005, K. MARDINI;

Doha: Al Safliya Island, Arabian Gulf, NE of Doha Bay, 5.XII.2003, M. MARTINEZ; Umsht Island, Arabian Gulf, E of Doha Bay, 5.XII.2003, M. MARTINEZ.

Jeryan al Batna: Abu Samrah, Qatar / Saudi Arabia SW border, seaside, 25.XI.2001, C. COCQUEMPOT; Nakhlat al Oraiq area, desert, 20.XII.2006, L. SOLDATI.

Mesaieed: Mesaieed (Umm said), south Sealine Beach Resort, 6.III.2003, pitfall traps in sand dunes, C. COCQUEMPOT; id., 31.V.2004, at night, L. SOLDATI; Mesaieed (Umm Said)^①, Sealine Beach Resort, 6.XII.2003, pitfall traps, M. MARTINEZ; id., 20.XI.2004, K. MARDINI.

Shraoo Island: Arabian Gulf, about 70 km offshore from Doha, 26.IV.2004, E. PIERRE.

Nocturnal species.

Distribution. Iran, Kuwait, Saudi Arabia (Eastern Province) and Oman (CARL 1994). First citation for Qatar.

***Hyperops* ESCHSCHOLTZ, 1831**

ESCHSCHOLTZ, 1831, Zool. Atlas, 4: 9.

***Hyperops (Belutschistanops) pygmea* subsp. *arabica* (KOCH, 1940)
(pl. 2, fig. 2)**

Hyperops doriai subsp. *arabica* KOCH, 1940, Mitt. Münchn. Ent. Ges., 30 (2): 686.

Al Ghuwairiya: Rawdat al Faras, University Farm, 04.XII.2003, M. MARTINEZ.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ.

Doha: Doha^①, Friends of the Environment Center (F.E.C.), 25.XI.2001, C. COCQUEMPOT.

Jeryan al Batna: Al Karaanah, near the northern entrance of the village, 25.XI.2001, C. COCQUEMPOT.

Madinat al Shamal: Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. MARTINEZ; Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Widespread and very common species all around the country. Nocturnal and mainly found under stones or every types of cover.

Distribution. Bahrain, Oman, Saudi Arabia and United Arab Emirates (KASZAB 1981). New for Qatar.

***Mesostena* ESCHSCHOLTZ, 1831**

ESCHSCHOLTZ, 1831, Zool. Atlas, 4: 9.

***Mesostena (Mesostena) puncticollis* SOLIER, 1835
(pl. 2, fig. 4)**

Mesostena puncticollis SOLIER, 1835, Ann. Soc. ent. Fr., 4: 405.

Al Ghuwairiya: Rawdat al Faras, University Farm, 04.XII.2003 and 17.IV.2004, M. MARTINEZ.

Al Jemailiya: south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT; Al Jemailiya al Naeem, about 5 km NW of the village, 19.V.2003, K. MARDINI; Zekreet, west shore, northern area of Zekreet, 21.IV.2004, M. MARTINEZ.

Al Khor: Al Khor Bay, Ras Umm Abdah (Great mangrove), 26.XI.2001, C. COCQUEMPOT; Al Khor area, west side of Ras al Matbakhah (mangrove),

4.XII.2003, M. MARTINEZ; Umm Aneeq, E of the village, artificial damp zone, 29.XII.2003, K. MARDINI.

Al Rayyan: Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, L. SOLDATI.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ; id., 29.V.2004, K. MARDINI; Trainah area, about 3–4 km SE of Trainah, 24.IV.2004, E. PIERRE; Al Kharrarah, 24.IV.2004, E. PIERRE & K. MARDINI; Al Kharrarah, 1,5 km N of the village, 1.VI.2004, beer pitfall traps, at the base of residual hills topped by crust, L. SOLDATI & C. COCQUEMPOT.

Doha: Al Safliya Island, Arabian Gulf, NE of Doha Bay, 5.XII.2003, M. MARTINEZ; Doha^①, F.E.C., 23.XI.2001, C. COCQUEMPOT; Umsht Island, Arabian Gulf, E. of Doha Bay, 5.XII.2003, M. MARTINEZ.

Jeryan al Batna: Al Karaanah, near the northern entrance of the village, 25.XI.2001, C. COCQUEMPOT; Al Markhiyah, Al Rakkiyah Farm (fodder farm), 25.XI.2001, C. COCQUEMPOT; id., 28.III.2002, M. MARTINEZ; Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 2.VI.2004, L. SOLDATI & C. COCQUEMPOT; Al Maszhabiyah area^②, desert, SW Qatar, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI.

Madinat al Shamal: Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. MARTINEZ; Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ; Al Ghariyah, 9.III.2003, K. MARDINI; Umm Aneeq, E. of the village, artificial damp zone, 29.XII.2003, K. MARDINI.

Mesaieed: Mesaieed (Umm Said)^①, Sealine Beach Resort, 6.XII.2003, pitfall traps, M. MARTINEZ.

Shraoo Island: Arabian Gulf, about 70 km offshore from Doha, 26.IV.2004, E. PIERRE & M. MARTINEZ.

Ubiquitous and probably the most common Tenebrionidae of Qatar. Nocturnal and active all year long.

Distribution. Near and Middle East, from Syria to Iran, Sinai, Arabic Peninsula, Turkmenia (KASZAB 1981) and Djibouti.

Mesostena (Mesostena) angustata subsp. *deserticola* nov.

(pl. 2, fig. 3; see description in chapter IV)

Al Ghuwairiya: Rawdat al Faras, University Farm, 04.XII.2003, M. MARTINEZ.

Al Jemailiya: Al Jemailiya al Naeem, about 5 km NW of the village, 19.V.2003, K. MARDINI; Al Jemailiya al Naeem, about 2 km NW of the village, 5.III.2003, C. COCQUEMPOT.

Al Wakra: Al Kharrarah, 1,5 km N of the village, 1.VI.2004, beer pitfall traps, at the base of eroded hills topped by crust, L. SOLDATI & C. COCQUEMPOT.

Jeryan al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 28.III.2002, M. MARTINEZ; Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 2.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT.

Madinat al Shamal: Al Ghariyah, seashore, 9.III.2003, K. MARDINI.

Nocturnal species hidden under stones, planks or every kind of cover laying on the ground, during the day. Behaviour probably identical as the previous species.

***Microdera* ESCHSCHOLTZ, 1831**

ESCHSCHOLTZ, 1831, Zool. Atlas, 4: 6

***Microdera (Tentyrodera) marginata* subsp. *deserticola* (BLAIR, 1933)**
(pl. 3, fig. 1)

Rhytinota deserticola BLAIR, 1933, The Entomologist's Monthly Mag., 69: 5.

Al Jemaiiya: south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT.

Jeryan al Batna: Al Maszhabiyah area^②, desert, SW Qatar, 20.XII. 2006, L. SOLDATI, M. MARTINEZ & K. MARDINI.

Mesaieed: Mesaieed (Umm Said) south Sealine Beach Resort, 6.III.2003, pitfall traps in dunes, C. COCQUEMPOT; Mesaieed (Umm Said)^①, Sealine Beach Resort, 6.XII.2003, pitfall traps in dunes, M. MARTINEZ; id., 10.I.2004, K. MARDINI.

Distribution. According to KOCH (1965: 114), the subspecies *deserticola* occurs in the center and in the eastern part of Saudi Arabia, while western it reaches the area close to the NE border of Yemen, as well as Oman. *Microdera (Tentyrodera) marginata* BAUDI s. str. is presently known only from southern Iran.

***Tentyrina* REITTER, 1900**

REITTER, 1900, Verh. Nat. – Forsch. Ver. Brünn, 39: 92; 166.

***Tentyrina palmeri* subsp. *thomasi* (BLAIR, 1931)**
(pl. 3, fig. 2)

Tentyria thomasi BLAIR, 1931, The Entomologist's Monthly Mag., 67: 269.

Al Jemailiya: Umm Bab, seaside and natural palm grove, 16.XII.2006, L. SOLDATI & M. MARTINEZ.

Jeryan al Batna: 1 km N of Markaz Sawda Natheel, at base of barkhans, 30.V.2004, L. SOLDATI (one dead specimen); Al Maszhabiyah area^②, desert, SW Qatar, 20.XII.2006, L. SOLDATI & M. MARTINEZ.

Madinat al Shamal: Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

This nocturnal insect probably lives in winter and spring only, at quiet and even low temperatures (around 10°C), during the potentially rainy season.

Distribution. S and SE desert of Saudi Arabia and Oman (KASZAB 1981); new for Qatar.

***Oxycara* SOLIER, 1835**

SOLIER, 1835, Ann. Soc. ent. Fr., 4 : 254.

***Oxycara (Oxycara) buettikeri* KASZAB, 1979**

(pl. 3, fig. 5)

Oxycara buettikeri KASZAB, 1979, Fauna Saudi Arabia, I: 285.

Al Wakra: 3–4 km SE of Trainah, 24.IV.2004, E. PIERRE & K. MARDINI; Trainah, 24.IV.2004, M. MARTINEZ; Al Kharrarah, 24.IV.2004, E. PIERRE & K. MARDINI; id., 29.V.2004, K. MARDINI.

Jeryan al Batna: Al Karaanah, 25.XI.2001, C. COCQUEMPOT; Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 2.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT; Rawdat Kharijah, near Rawdat Kharijah farm, 17.IV.2005, K. MARDINI.

Madinat Al Shamal: Al Zubarah, Al Zubarah Fort (Museum) 31.III.2002, M. MARTINEZ; Al Ghariyah area, seashore, about 0,5 km S of Ras Umm Hasaa, 3.VI.2005, K. MARDINI.

Mesaieed: Khor al Adaid, seashore, 24.IV.2004, E. PIERRE.

Under stones, planks or every kind of cover laying on the ground. Nocturnal.

Distribution. Saudi Arabia and United Arab Emirates. New for Qatar.

***Oxycara (Symphoxycara) hansbremeri* LILLIG, 2001**

(pl. 3, fig. 4)

Oxycara (Symphoxycara) hansbremeri LILLIG, 2001, Coleoptera, 5: 380.

Al Ghuwairiya: Rawdat al Faras, University Farm, 04.XII.2003, M. MARTINEZ.

Al Jemailiya: Dohat Fashakh (northern coast), wooded zone, 5.III.2003, C. COCQUEMPOT; Al Jemailiya al Naeem, 5 km NW of the village, 19.V.2003, K. MARDINI; Zekreet, west shore, northern area of Zekreet, 21.IV.2004, M. MARTINEZ.

Al Rayyan: Al Sheehaniyah, south of Al Sheehaniyah, arid natural area of shrubby spontaneous vegetation, 27.XI.2001, C. COCQUEMPOT; Al Sheehaniyah, Al Khaiarin Botanical Reserve, 13.IV.2004, K. MARDINI & A. Al Yahri; id., 26.IV.2004, E. PIERRE; id., 6.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ; Trainah area, 3–4 km SE of the village, 24.IV.2004, K. MARDINI.

Jeryan al Batna: Al Karaanah, near the northern entrance of the village, 25.XI.2001, C. COCQUEMPOT; Nakhlat al Oraiq, south Qatar, near the border, desert & fodder farm, 22.IV.2004, M. MARTINEZ.

Madinat al Shamal: Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. Martinez; Al Zubarah, Al Zubarah Fort (Museum) 31.III.2002, M. MARTINEZ; Al Ghariyah, seashore, 9.III.2003, C. COCQUEMPOT; Al Ghariyah area, about 1 km N of Al Ghariyah, small damaged hills, 9.III.2003, Al Ghariyah area, seashore, about 0,5 km S of Ras Umm Hasaa, 3.VI.2005, K. MARDINI.

Mesaieed: Mesaieed (Umm Said)[®], Sealine Beach Resort, 02.IV.2002, M. MARTINEZ; Khor al Adaid area, halfway northern shores of Khor al Adaid / Al Qaseerah water well, 24.IV.2004, E. PIERRE & K. MARDINI.

Shraoo Island: Arabo-Persian Gulf, about 70 km offshore from Doha, 26.IV.2004, E. PIERRE & M. MARTINEZ.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Same behaviour as the previous species (*O. buettikeri* KASZAB).

Distribution. Species described from the United Arab Emirates and also known from Bahrain, Oman, eastern Yemen and southern Iran (LILLIG 2001).

Ammogiton PEYERIMHOFF, 1919

PEYERIMHOFF, 1919, Bull. Soc. ent. Fr.: 326

Ammogiton schawalleri sp. nov.

(pl. 4, fig. 1; see description in chapter IV)

Mesaieed: Mesaieed (Umm Said)[®], Sealine Beach Resort, 2.IV.2002, pit-fall traps, M. MARTINEZ; Mesaieed (Umm said), south Sealine Beach Resort, 6.III.

2003, pitfall traps in dunes, C. COCQUEMPOT; id., 3.III.2003, G. Sama; Mesaieed (Umm said)^①, Sealine Beach Resort, 6.XII.2003, pitfall traps, M. MARTINEZ.

This new species is a typical sabulicolous nocturnal species that lives exclusively in sand dunes habitats. It is generally found still at the surface of the sand, by the light of a lamp.

The distribution of Arabian species of *Ammogiton* have been recently summarized by SCHAWALLER (1990). First record for this genus in Qatar.

***Falsocatomulus* PIC, 1914**

PIC, 1914, L'Echange, 30: 10.

***Falsocatomulus euphraticus* PIC, 1914**

(pl. 4, fig. 2)

Falsocatomulus euphraticus PIC, 1914, L'ECHANGE, 30: 11.

Al Jemaiiya: Dohat al Husain Strait, NE coast, seaside, about 15 km, NW of Al Jemaiiya al Naeem, 5.III.2003, C. COCQUEMPOT; Dohat Fashakh (northren coast), wooded zone, 5.III.2003, C. COCQUEMPOT; south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT; Umm Bab, seaside (small dunes) and palm grove, 1.VI.2004, night hunting, L. SOLDATI & C. COCQUEMPOT.

Jeryan al Batna: Nakhlat al Oraiq area, desert, 20.XII.2006, L.SOLDATI.

Found on the surface of the sand dunes at night and buried during the day, this insect seems to live all-year long.

Distribution. Mentioned by KASZAB (1981) from Irak and Iran, *Falsocatomulus euphraticus* Pic was also suspected to live in the North-Eastern part of the Arabian Peninsula. This new record from Qatar is a confirmation.

***Girardius* gen. nov.**

(see description in chapter IV)

***Girardius persicus* (BAUDI DI SELVE, 1875)**

(pl. 3, fig. 3)

Micipsa persica BAUDI DI SELVE, 1875, D. Ent. Zeitschr., 19 (1): 58.

Al Ghuwairiya: Rawdat al Faras, University Farm, 2.III.2003, C. Cocquempot; id., 4.XII.2003, M. MARTINEZ.

Al Jemailiya: Dohat Fashakh (northern coast), wooded zone, 5.III.2003, C. COCQUEMPOT.

Madinat al Shamal: Al Zubarah, Al Zubarah, Fort (Museum), 31.III.2002, M. MARTINEZ.

Nocturnal insect, found under stones, planks, or different kinds of covers during the day.

Distribution. Described from "Persia merid., Bender Abbas." So far, only known from southern Iran and Qatar.

ADESMIINI LACORDAIRE, 1859

***Adesmia* FISCHER VON WALDHEIM, 1822**

FISCHER VON WALDHEIM, 1822, Entomogr. Russ., 1: 153.

***Adesmia (Oteroscelis) khaliensis* BLAIR, 1931**

(pl. 4, fig. 4 ♂ & 4 ♀)

Adesmia (Oteroscelis) khaliensis BLAIR, 1931, The Entomologist's Monthly Mag., 67: 270.

Al Wakra: about 1,5 km N of Kharrarah, at the base of eroded hills topped by crust, 29.V.2004, L. SOLDATI; many remains of dead specimens.

Jeryan al Batna: Abu Samrah, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI; Nakhlat al Oraiq, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI.

This diurnal insect runs fastly on the ground between plant clumps where it takes refuge when threatened. It seems to live only during the winter period.

Possibly, *Adesmia (Oteroscelis) aenescens* KÜHNELT, 1951, described from Iran, could be a junior synonym *Adesmia (O.) khaliensis*. Comparison of both types is required in this case.

Distribution. South-eastern part of the Arabian Peninsula (Saudi Arabia and Oman) (KASZAB 1981).

***Adesmia (Macradesmia) cancellata* (KLUG, 1830)**

(pl. 4, fig. 3)

Pimelia cancellata KLUG, 1830, Smybolae Phys., 2: Nr. 37, Taf. 13, Fig. 11.

Al Ghuwairiya: Rawdat Al Faras, University Farm 23.XI.2001, C. COCQUEMPOT; id. 4.XII.2003, M. MARTINEZ.

Al Rayyan: Al Wibrah, private farm of Sheikh Saoud Bin Ali Al Thani, 24.XI.2001, C. COCQUEMPOT.

Jeryan Al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 28.III.2002, M. MARTINEZ; Umm al Shubrum, private farm, 2.VI.2004, L. SOLDATI; Nakhlal al Oraiq area, desert, 20.XII.2006, L. SOLDATI.

Madinat Al Shamal: Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Diurnal insect, usually active in the morning, or in the end of the afternoon. Common nearly everywhere, except on beaches and in sand dunes. In the contrary, it seems to have a particularly liking for dense or compact ground, like, for example, palm trees plantations.

Distribution. Irak, Bahrain, Saudi Arabia, Oman, Yemen (KASZAB 1981).

AKIDINI BILLBERG, 1820

Akis HERBST, 1799

HERBST, 1799, Natursyst. Käfer, 8 c: 124.

Akis spinosa (LINNAEUS, 1764)

(pl. 5, fig. 1)

Tenebrio spinosus LINNAEUS, 1764: 101.

Al Jemaiiya: Jemaiiya al Naeem, about 5 km NW of the village, 19.V.2003, K. MARDINI; south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT.

Al Khor: Al Khefaj area^②, palm trees plantation along highway, 2.III.2003, C. COCQUEMPOT.

Al Wakra: Al Kharrarah, about 1,5 km N of the village, at the base of eroded hills, 1.VI.2004, beer pitfall traps, L. SOLDATI, C. COCQUEMPOT & K. MARDINI; Trainah, 24.IV.2004, M. MARTINEZ.

Jeryan al Batna: Al Maszhabiyah area^①, desert, SW Qatar, 28.II.2004, K. MARDINI.

Nocturnal and quite common everywhere; same behaviour as *Blaps kollarii* SEIDLITZ.

Distribution. Arabian Peninsula, Egypt, Jordan.

Akis elevata subsp. *sculptior* KOCH, 1935 is very probably a junior synonym of *Akis subtricostata* REDTENBACHER, 1850, which was described from the southern Persian province of Farsistan (now Fars in Iran, capital: Shiraz).

PLATYOPINI SEMENOW, 1893

Paraplatyope GRIDELLI, 1953

GRIDELLI, 1953, Atti. Mus. Civ. St. Nat. Trieste, 19 (1): 45.

Paraplatyope arabica subsp. *arabica* (BLAIR, 1931)

(pl. 5, fig. 4)

Leucolaeophus arabicus BLAIR, 1931, The Entomologist's Monthly Magazine, 67: 270.

Jeryan al Batna: Nakhlat al Oraiq, desert area, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI.

This insect spends the day-period in a small superficial and subhorizontal hole in the sand. It probably lives this cover at dawn or at twilight, like *Leucolaeophus* spp.

Distribution. Kuwait, Saudi Arabia, United Arab Emirates (KASZAB 1982). This beautyfull species is new for Qatar.

PIMELIINI LATREILLE, 1802

Prionothea DEJEAN, 1834

DEJEAN, 1834, Catalogue, 3: 179.

Prionothea coronata subsp. *ovalis* ANCEY, 1881

(pl. 6, fig. 3)

Prionothea ovalis ANCEY, 1881, Le Naturaliste, 3: 397.

Jeryan al Batna: Al Maszhabiyah area^①, desert, SW Qatar, 28.II.2004, K. MARDINI.

Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 31.V and 4.VI.2004, at light and in pitfall traps in sand dunes, L. SOLDATI, K. MARDINI & C. COCQUEMPOT.

Wandering insect at night, in the littoral sand dunes. The new generation appears probably at the end of spring, as indicates the freshness and the great abundance of the specimens caught at the end of May. The very few observations of living individuals during the other periods of the year let think that this species could mainly be active in summer.

Distribution. Iraq, Yemen, Saudi Arabia and Qatar.

***Trachyderma* LATREILLE, 1828**

LATREILLE, 1828, Bory de Saint-Vincent Dictionaire, 576.

***Trachyderma parvicollis* (BAUDI DI SELVE, 1876)**

(pl. 6, fig. 1)

Ocnerna parvicollis BAUDI DI SELVE, 1876, D. Ent. Zeitschr., XX (1): 5.

=*Trachyderma perseae* (BAUDI DI SELVE, 1876) syn. nov.

(see notes in chapter IV)

Ocnerna perseae BAUDI DI SELVE, 1876, D. Ent. Zeitschr., XX (1): 6.

Al Ghuwairiya: Rawdat al Faras, University Farm, 4.XII.2003, M. MARTINEZ.

Al Jemailiya: NW Al Jemailiya, 5.III.2003, C. Cocquempot; south of Qaryat al Muhana, road Umm Bab/Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT; Zekreet, west shore, northern area of Zekreet, 21.IV.2004, M. MARTINEZ.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 27.IV.2004, M. MARTINEZ.

Al Wakra: Al Kharrarah, 24.IV.2004, E. PIERRE; id., 1.VI.2004, L. SOLDATI, C. COCQUEMPOT & K. MARDINI; Wadi Jallal, 1.VI.2004, L. SOLDATI, M. MARTINEZ & K. MARDINI.

Doha: Doha^①, F.E.C., 26.IV.2004, M. MARTINEZ.

Jeryan al Batna: Al Markhiyah, Al Rakkiyah farm (fodder farm), 28.III.2002, M. MARTINEZ; Al Maszhabiyah area^②, desert, SW Qatar, 20.XII.2006, L. SOLDATI.

Madinat al Shamal: Al Muatarad (Sabkhat), 9.III.2003, C. COCQUEMPOT; Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Very common and widespread species in Qatar. Nocturnal.

Distribution. Iran: Bandar Abbas, Jiroft, Minab. Qatar.

***Thriptera* SOLIER, 1836**

SOLIER, 1836, Ann. Soc. ent. Fr., 5: 48.

***Thriptera kraatzi* HAAG-RUTENBERG, 1876**

(pl. 6, fig. 2)

Thriptera kraatzi HAAG-RUTENBERG, 1876, Ent. Monatsbl., 1: 75.

Al Ghuwairiya: Rawdat al Faras, University Farm, 8.III.2003, K. MARDINI; id., 4.XII.2003, M. MARTINEZ.

Al Khor: Al Khefaj area[®], palm trees plantation along highway, 2.III.2003, C. COCQUEMPOT.

Doha: Doha[®], F.E.C., 23.XI.2001, C. Cocquempot; id., 5.V.2004, K. MARDINI.

Jeryan al Batna: Umm al Shubrum area, near al Hamam (Dahl al Hamam), 2.VI.2004, L. SOLDATI & C. COCQUEMPOT.

A very common species in Qatar that we often neglected to collect.

Distribution. Arabian Peninsula (Saudi Arabia, Yemen, Oman, Qatar).

***Pimelia* FABRICIUS, 1775**

FABRICIUS, 1775, Syst. Ent.: 251.

***Pimelia (Pimelia) arabica* KLUG, 1830**

(pl. 6, fig. 4)

Pimelia arabica KLUG, 1830, Symbolae phys., 2: Nr. 18, Taf. 12, fig. 5.

Al Jemailiya: south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, dead specimens, C. COCQUEMPOT; Umm Bab, seaside and palm grove, 1.VI.2004, many dead specimens, L. SOLDATI.

Jeryan al Batna: 1 km N of Markaz Sawda Natheel, at base of barkhans, 30.V.2004, dead specimens, L. SOLDATI; Nakhl al Oraiqa area, palm trees plantations, near the Saudian border, SW Qatar, 31.III.2004, K. MARDINI; Al Maszhabiyah area[®], desert, SW Qatar, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI.

Distribution. Egypt (Ismailia, Sinaï), Jordan and all the Arabian Peninsula (KASZAB 1982). New for Qatar.

BLAPTINI LEACH, 1815

***Blaps* FABRICIUS, 1775**

FABRICIUS, 1775, Syst. Ent.: 254

***Blaps kollarii* SEIDLITZ, 1893**

(pl. 5, fig. 2)

Blaps kollarii SEIDLITZ, 1893, Naturg. Ins. Deutschl., 5: 263, 305.

Jeryan Al Batna: Al Maszhabiyah area^①, desert, SW Qatar, 28.II. 2004, K. MARDINI; Al Maszhabiyah area^②, desert, SW Qatar, 20.XII.2006, L. SOLDATI, M. MARTINEZ & K. MARDINI; Markaz Sawda Natheel, at dawn, at the entry of rodents burrows, 29.V.2004, L. SOLDATI; Nakhlat al Oraiq, palm trees plantations, near the Saudian border, SW Qatar, 31.III.2004, K. MARDINI.

Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 6.III.2003, pitfall traps in dunes, C. COCQUEMPOT; Mesaieed (Umm said)^①, Sealine Beach Resort, 10.I.2004, K. MARDINI.

Nocturnal and common, this species occurs nearly everywhere, even in the littoral sand dunes. In the contrary of many other *Blaps* species, this one seems not to be synanthropic. At dawn, mostly in the southern parts of the country, one can see these insects shelter from the heat of the sun into the rodents' holes, along with *Akis elevata* ssp. *sculptior* KOCH (Coleoptera, Tenebrionidae) and *Anthia* (*Thermophilum*) *duodecimguttata* BONELLI, 1813 (Coleoptera, Caraboidea).

Notes on larval development and pupation of this insect in laboratory conditions were published by MENON & al. (1988).

Distribution. Species described from Egypt, Arabia and Mesopotamia (SEIDLITZ 1893). Bahrain, Saudi Arabia, Yemen, Oman, Jordan and Kuwait (KASZAB 1982). New for Qatar.

LEICHENINI MULSANT, 1854

Apsheronellus BOGAČEV, 1967

BOGAČEV, 1967, Proc. Inst. Zool. Acad. Sc. Azerbaijan SSR, 16: 157.

Apsheronellus arabicus sp. nov.

(pl. 5, fig. 3; see description in chapter IV)

Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI.

All the specimens were found at night, with the light of a frontal lamp, living on the salt-rich crust between the littoral sand dunes. Like the species of the neighbouring genus *Leichenum*, this insect seems to be halophilous.

Distribution. At the moment, this new species is only known from Qatar. But maybe, it is not endemic.

MELANIMINI SEIDLITZ, 1894

Cheirodes GÉNÉ, 1839

Mem. Accad. Torino: 73

Cheirodes (Cheirodes) sardous GÉNÉ, 1839

(pl. 7, fig. 1)

Cheirodes sardous GÉNÉ, 1839, Mem. Accad. Torino: 73, pl. 2, fig. 12.

Al Jemailiya: Umm Bab, beach, 1.VI.2004, light trap, L. SOLDATI.

Nocturnal or crepuscular, on the sandy surface of the littoral dunes. Attracted by U. V. light trap. All the species of *Cheirodes* that occur in Qatar have well developed wings and so, they have good flying abilities, which help in colonizing new areas.

Distribution. Nearly all around the Mediterranean Sea, Near Orient and the Arabian Peninsula. Eastward to Iran (KASZAB 1982).

Cheirodes (Histiaea) asperulus (REITTER, 1884)

(pl. 7, fig. 2)

Anemia asperula REITTER, 1884, Dt. ent. Z., 28: 260.

Al Jemailiya: Umm Bab, beach, 1.VI.2004, light trap, L. SOLDATI.

Jeryan al Batna: Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), light trap, 2.VI.2004, L. SOLDATI & C. COCQUEMPOT.

Nocturnal, on the sandy surface of the littoral dunes. Attracted by U. V. light trap.

Distribution. North Africa from Senegal to Soudan, Palestine, Syria, Jordan, Saudi Arabia, reaching Iran eastwards (ARDOIN 1971).

Cheirodes (Pseudanemia) brevicollis (WOLLASTON, 1864)

(pl. 7, fig. 3)

Anemia brevicollis WOLLASTON, 1864, Catal. Canar., Col.: 493.

Al Jemailiya: Umm Bab, small sand-dunes on the littoral, 1.VI. 2004, light trap and on the ground, L. SOLDATI.

Jeryan al Batna: Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 2.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT.

Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI.

Same behaviour as the previous species.

Distribution. Widespread from the Canary Islands to Pakistan and Central Asia up to Chinese Turkestan. All the Arabian Peninsula (Saudi Arabia, Yemen, Bahrain and Oman). New for Qatar. Also present in Europe: Southern Italy and Sicily (GARDINI 1995), Spain (CARTAGENA & GALANTE 2000) and Malta (GRIMM 1986).

OPATRINI BRULLÉ, 1832

***Dilamus* JACQUELIN DU VAL, 1861**

JACQUELIN DU VAL, 1861, Gen. Col. Ent., 3: 279.

***Dilamus (Dilamus) arabicus* KASZAB, 1979** (pl. 7, fig. 4)

Dilamus arabicus KASZAB, 1979, Fauna Saudi Arabia, 1: 286.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Nothing is known about the ecology and the biology of this species. The here mentioned examples have been collected under stones.

Distribution. So far, only known from Saudi Arabia (KASZAB 1979, 1982).

***Prodilamus* ARDOIN, 1969**

ARDOIN, 1969, Mém. IFAN, 84: 258.

***Prodilamus mandli* (KASZAB, 1963)** (pl. 7, fig. 5)

Dilamus mandli Kaszab, 1963, Anz. öst. Akad. Wiss., 100: 74.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Collected under stones. There is no other available information dealing with the ecology and the biology of this species.

Distribution. Described from Iran (KASZAB 1963) and also mentioned by MEDVEDEV (1968) of southern Iran. New for the Arabian Peninsula.

***Gonocephalum* SOLIER, 1834**

SOLIER, 1834, Ann. Soc. ent. Fr., 3: 498.

***Gonocephalum (Gonocephalum) besnardi* KASZAB, 1982**

(pl. 8, fig. 1)

Gonocephalum besnardi KASZAB, 1982, Fauna S. Arabia, 4: 163.

Al Wakra: Al Wakra area, seashore SE of Al Wakra, 14.III.2005, K. MARDINI.

Doha: Doha, waste ground in front of flats, N of the town, 1.III.2003, C. COCQUEMPOT.

Distribution. Species described from the United Arab Emirates (loc. cl.: Ras Al-Khayma) and from Oman (KASZAB 1982).

Thanks to Mr. Claude Besnard, who was very kind to lend me 3 paratypes of this species that are absolutely identical to the specimens from Qatar.

***Gonocephalum (Gonocephalum) setulosum* (FALDERMANN, 1837)**

(pl. 8, fig. 2)

Opatrum setulosum FALDERMANN, 1837, Fauna Transcauc. 2: 60.

Al Ghuwairiya: Rawdat al Faras, University Farm, 17.IV.2004, under stones, E. PIERRE.

Al Jemaliya: south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT; Umm Bab, palm grove, 1.VI.2004, L. SOLDATI.

Jeryan al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 25.XI.2001, sandy ruts, C. COCQUEMPOT.

Shraoo Island: Arabian Gulf, about 70 km offshore from Doha, 25.IV.2004, E. PIERRE.

Distribution. Central-Asia, Caucasus, Iran, Irak, Turkei, Syria, Israel, Egypt, Libya, Tunisia, East-mediterranean Islands, from place to place in the Sahara as far as Niger, Saudi Arabia, N Yemen (KASZAB, 1982; FERRER, 1993; FERRER, 1995). First citation from Qatar.

The *setulosum* species-complex is still unclear. Authors like KASZAB (1979: 267) or FERRER (1995: 4) consider *Gonocephalum pubiferum* REITTER, 1904, described originally as a simple variety, as a valid species. Both taxa are often sympatric. In the present work, I opted for the name of the first described taxa (*setulosum* FALDERMANN 1837).

***Gonocephalum (Gonocephalum) rusticum* (OLIVIER, 1811)**

(pl. 8, fig. 3)

Opatrum rusticum OLIVIER, 1811, Encycl. méth., 8: 498.

Al Ghuwairiya: Rawdat al Faras, University Farm, under stones, 4.XII.2003, M. MARTINEZ.

Al Jemaliya: Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Al Rayyan: Al Wibrah, private farm of Sheikh Saoud Bin Ali Al Thani, 24.XI.2001, C. COCQUEMPOT; Al Sheehaniyah, farm, melon field, 5.VI.2004, L. SOLDATI; Sailiyah Lake[®], 20.IV.2004, E. PIERRE.

Doha: Doha[®], F.E.C., 23.IV.2003, K. MARDINI.

Jeryan al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 25.XI.2001, in sandy ruts, C. COCQUEMPOT; id., 28.III.2002, under stones and fodder bales, M. MARTINEZ.

Distribution. Widespread species, often sympatric with the next one (*G. patrule*) within its distribution range. Canary Islands, Madeira and Azores, Circum-mediterranean, Central Asia, Saudi Arabia and Oman. First citation from Qatar (KASZAB 1982, FERRER 1993, FERRER 1995).

***Gonocephalum (Gonocephalum) patrule* (ERICHSON, 1843)**

(pl. 8, fig. 4)

Opatrum patrule ERICHSON, 1843, Arch. Naturgesch., 9 (1): 248.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Distribution. Cape Verde and Canary Islands, Tunisia, Libya, Egypt, Sudan (Northern), Ethiopia, Somalia, Syria, Israel, Saudi Arabia, Yemen and Oman (FERRER 1993, 1995). New for Qatar.

***Gonocephalum (Gonocephalum) consobrinum* BLAIR, 1923**

(pl. 8, fig. 5)

Gonocephalum consobrinum BLAIR, 1923, The Entomologist's Monthly Mag., (3) 10: 122.

Al Khor: Al Khafaj area, palm trees plantation, along highway, 4.VI.2004, night hunting with a frontal lamp and on the ground, L. SOLDATI.

Al Rayyan: Al Wibrah, Private farm of Sheikh Saoud Bin Ali Al Thani, 24.XI.2001, C. COCQUEMPOT.

Doha: Al Safliya Island, Arabian Gulf, NE of Doha Bay, 5.XII.2003, M. MARTINEZ.

Madinat al Shamal: Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. MARTINEZ.

Distribution. Iran, Irak, Pakistan, Afghanistan, Ethiopia, Arabia (Saudi Arabia and S Yemen) (KASZAB 1982, FERRER 1993, 1995). New for Qatar.

***Gonocephalum (Gonocephalum) prolixum* (ERICHSON, 1843)**
(pl. 8, fig. 6)

Opatrum prolixum ERICHSON, 1843, Arch. Naturgesch., 9 (1): 248.

Al Wakra: Al Kharrarah, 24.IV.2004, E. PIERRE & M. MARTINEZ; id., 29.V.2004, K. MARDINI; Trainah, 24.IV.2004, M. MARTINEZ.

Distribution. Widespread in Africa, mainly subsaharian (FERRER 1995). Saudi Arabia (KASZAB 1979).

This insect is generally considered as semi-synanthropic, and sometimes, in case of proliferation, it can be a pest of stored maize (DELOBEL & TRAN 1993).

***Opatroides* BRULLÉ, 1832**

BRULLÉ, 1832, Expéd. Sci. Morée, 3: 219.

***Opatroides punctulatus* BRULLÉ, 1832**
(pl. 9, fig. 1)

Opatroides punctulatus BRULLÉ, 1832, Expéd. Scient. Morée, 3: 220, pl. 40, fig. 9.

Al Ghuwairiya: Rawdat al Faras, University Farm, 4.XII.2003, M. MARTINEZ.

Al Jemailiya: Al Jemailiya al Naeem, 5 km NW of the village, 19.V.2003, M. MARTINEZ; Zekreet, west shore, northern area of Zekreet, 21.IV.2004, M. MARTINEZ.

Al Khor: Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. MARTINEZ.

Al Rayyan: Al Sheehaniyah, Al Husayniyah Farm, 24.XI.2001, C. COCQUEMPOT; Al Sheehaniyah, Farm of Arab Company for Agricultural Production, 3.XII.2003, M. MARTINEZ.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ.

Doha: Doha^①, F.E.C., 26.IV.2004, M. MARTINEZ; id., 10.III.2005, K. MARDINI.

Jeryan Al Batna: Al Karaanah, near the northern entrance of the village, 25.XI.2001, C. COCQUEMPOT; Al Markhiyah, Al Rakkiyah Farm (fodder farm), 28.III.2002, M. MARTINEZ.

Madinat Al Shamal: Al Ghariyah, seashore, 9.III.2003, C. COCQUEMPOT; Al Muraydah, Wadi Sadria Farm, 31.III.2002, M. MARTINEZ; Al Zubarah, Al Zubarah Fort (Museum) 31.III.2002, M. MARTINEZ.

Shraoo Island: Arabian Gulf, about 70 km offshore from Doha, 26.IV.2004, M. MARTINEZ.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Extremely common and ubiquitous species, except in the true desert\zones. Generally sympatric with the following species, *Opatroides vicinus* (Fairmaire).

Distribution. The typical form is nearly circummediterranean, from southern Italy in Europe to Near Orient; it is overall present in North Africa, but also in Sudan, Djibouti, Israel, Saudi Arabia and Oman (FERRER 2005). Already known from Qatar (ABDU & SHAUMAR 1985).

***Opatroides vicinus* (FAIRMAIRE, 1896)**
(pl. 9, fig. 2)

Penthicus vicinus FAIRMAIRE, 1896, Ann. Soc. Ent. Belg., 40: 21.

Al Jemailiya: south of Qaryat al Muhana, road Umm Bab / Jelaihah, damaged hills near the sea, 6.III.2003, C. COCQUEMPOT; Zekreet, west shore, northern area of Zekreet, 21.IV.2004, M. MARTINEZ.

Al Khor: Umm Aneeq, E. of the village, artificial damp zone, 29.XII.2003, K. MARDINI.

Al Rayyan: Al Sheehaniyah, Al Husayniyah Farm, 24.XI.2001, C. COCQUEMPOT; Al Sheehaniyah, south of Al Sheehaniyah, arid natural area, shrubby spontaneous vegetation 27.XI.2001, C. COCQUEMPOT; Sailiyah Lake^①, 26.III.2002, M. MARTINEZ; Al Sheehaniyah, Al Khaiarin Botanical Reserve, 26.IV.2004, E. PIERRE.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ; Al Kharrarah, 29.V.2004, K. MARDINI.

Doha: Al Safliya Island, 5.XII.2003, M. MARTINEZ.

Jeryan al Batna: Al Karaanah, 25.XI.2001, C. COCQUEMPOT; Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 21.VI.2004, light trap,

L. SOLDATI & C. COCQUEMPOT; Nakhlat al Oraiq area, desert, 22.IV.2004, M. MARTINEZ; id., 20.XII.2006, L. SOLDATI.

Madinat Al Shamal: Al Muraydah, Wadi Sadria Farm; 31.III.2002, M. MARTINEZ; Al Zubarah, Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ; Al Ghariyah area, about 1 km N of Al Ghariyah, small damaged hills, 9.III.2003, C. COCQUEMPOT; Al Ghariyah area, seashore, about 0,5 km S of Ras Umm Hasaa, 03.VI.2005, K. MARDINI.

Distribution. KASZAB (1982: 170) cited this species from Pakistan, Saudi Arabia, Bahrain, Kuwait, Oman and Northern part of Yemen. FERRER (2005) gives also India, Afghanistan and United Arab Emirates.

***Penthicus* FALDERMANN, 1836**

FALDERMANN, 1836, Bull. Soc. Imp. Naturalistes Moscou, 9: 384.

***Penthicus (Penthicus) oblongopunctatus* (REITTER, 1904) (pl. 9, fig. 3).**

Lobothorax (Lobothorax) oblongopunctata REITTER, 1904, Verhandl. nat. – ver. Brünn, 42: 164.

Al Wakra: Trainah, 24.IV.04, M. MARTINEZ; Trainah area, 3–4 km SE of the village, 24.IV.2004, E. PIERRE & K. MARDINI.

Species described by REITTER from Ahnger (Transcaspian) and from «Onady Leten» (Arabia) which does probably mean «Quadi (= Wadi?) Leten (Jeten?)». This locality could be in NW Arabia, in Jordan (N of Aqaba), according to GRIDELLI (1953: 64).

Distribution. So far (KASZAB 1982), known from Turkmenia, Mesopotamia, Afghanistan, Jordan and Saudi Arabia. New for Qatar.

***Proscheimus* DESBROCHERS DES LOGES, 1881**

DESBROCHERS DES LOGES, 1881, Bull. Acad. d'Hipp., 16: 127.

***Proscheimus arabicus* DESBROCHERS DES LOGES, 1881 (pl. 9, fig. 4)**

Proscheimus arabicus DESBROCHERS DES LOGES, 1881, Bull. Acad. d'Hipp., 16: 128.

Al Jemailiya: Al khattiyah, Sabkhat al Mataar, 21.IV.2004, K. MARDINI; Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Nocturnal, found on the sand surface of the small littoral dunes. Can also be catch by riddling the sand.

Distribution. Egypt, Sinai, Jordan, Saudi Arabia (KASZAB 1982). First citation for Qatar.

***Clitobius* Mulsant et Rey, 1859**

Mulsant et Rey, 1859 Opusc. Ent., 10: 141.

***Clitobius (Clitobius) oblongiusculus* (Fairmaire, 1875)**
(pl. 9, fig. 5)

Halonomus oblongiusculus Fairmaire, 1875, Pet. Nouv. Ent., 1 (124): 495.

Al Ghuwairiya: Rawdat al Faras, University Farm, 4.XII.2003, M. MARTINEZ; id., 17.IV.2004, E. PIERRE.

Al Jemailiya: Dohat al Husain strait, NE coast, seaside, about 15 km NW of Al Jemailiya al Naeem, 5.III.2003, C. COCQUEMPOT; Al Khattiyah, Sabkhat al Mataar, 21.IV.2004, K. MARDINI.

Al Rayyan: Al Sheehaniyah, Al Husayniyah Farm, 24.XI.2001, C. COCQUEMPOT; Sailiyah Lake^②, 20.IV.2004, E. PIERRE.

Al Wakra: Trainah, 24.IV.2004, M. MARTINEZ; seashore, SE of Al Wakra, 14.III.2005, K. MARDINI.

Doha: Umsht Island, 5.XII.2003, M. MARTINEZ; Doha^①, F.E.C., 5.V.2004, K. MARDINI.

Jeryan al Batna: Nakhl al Oraiqa area, desert, 22.IV.2004, M. MARTINEZ.

Madinat al Shamal: Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Mesaieed: Mesaieed (Umm Said)^①, Sealine Beach Resort, 19.IV.2004, M. MARTINEZ.

Typically halophilous nocturnal species that is frequently found under stones in the surroundings of salt lakes, sebkhas, or in the littoral zones.

Distribution. North Africa, Near East, Transcaspiian, Mesopotamia and Arabia (KASZAB 1982). Also present in Cyprus (GRIMM 1991).

TRACHYSCELINI BLANCHARD, 1845

Trachyscelis LATREILLE, 1809

LATREILLE, 1809, Gen. Crust. et Ins., 4: 379

Trachyscelis litoralis sp. nov.

(pl. 10, fig. 1; see description in chapter IV)

Madinat Al Shamal: Al Ghariyah, seashore, 9.III.2003, C. Cocquempot.

Doha: Umsht Island, 5.XII.2003, M. MARTINEZ.

Al Khor: Al Khor area, west side of Ras al Matbakhah (Mangrove), 18.IV.2004, M. MARTINEZ.

Beaches and sea shores, under varied kinds of sea refuses, among which the body of a dead dolphin. Psammobiont insect.

Distribution. Ss this new species was probably currently misidentified as *Trachyscelis tenuestriatus* Fairmaire, 1886, it is only known at present from Qatar and Iran. Perhaps is it a vicariant species of *T. tenuestriatus* in the Arabo-Persian Gulf?

TRIBOLIINI MULSANT, 1854

Latheticus WATERHOUSE, 1880

WATERHOUSE, 1880, Ann. Mag. Nat. Hist., (5) 5: 147.

Latheticus oryzae WATERHOUSE, 1880

(pl. 10, fig. 2)

Latheticus oryzae WATERHOUSE, 1880, Ann. Mag. Nat. Hist., (5) 5: 148.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, in barley (food for gazelles), L. SOLDATI.

A common stored-food grains pest in tropical and subtropical regions, especially in Asia and Africa. Can potentially infest the following foodstuffs: rice, maize, corn, millet and their respective flours (DELOBEL & TRAN, 1993).

Distribution. Nearly cosmopolitan species. Already known from Saudi Arabia and northern Yemen (KASZAB 1982).

***Tribolium* MAC LEAY, 1825**

MAC LEAY, 1825, *Annulosa Javanica*, London: 47.

***Tribolium castaneum* (HERBST, 1797)**
(pl. 10, fig. 3)

Colydium castaneum HERBST, 1797, *Naturs. aller bek. in-und ausländ. Insekten*, A. Käfer, 7: 282.

Doha: Doha^②, F.E.C, 12.V.2003, K. MARDINI.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, in barley (food for gazelles), L. SOLDATI.

One of the most important food grains pest. It is known to infest the following food stuffs: rice, corn, bran, maize, barley, sorghum, millet, manioc, tapioca, yam, dried fruits, peanut, cacao, muscade nuts, pepper, ginger and different kind of flours (DELOBEL & TRAN 1993). This species can also greatly damage entomological collections!

Distribution. Cosmopolitan. Cited from Saudi Arabia and Yemen (KASZAB 1982).

ALPHITOBIIINI REITTER, 1917

***Alphitobius* STEPHENS, 1829**

STEPHENS, 1829, *Ill. Brit. Ent.*, 5: 19.

***Alphitobius diaperinus* (PANZER, 1796)**
(pl. 10, fig. 4)

Tenebrio diaperinus PANZER, 1796, *Fauna Germ.*, 37: 16.

Al Ghuwairiya: Rawdat al Faras, University Farm, 17.IV.2004, E. PIERRE.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT.

Madinat Al Shamal: Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Wild, this insect lives into hollowed tree trunks, in bird nests or in the caves entry, where it feeds with guano from either the birds or the bats. Thus, it is not surprising that it is very abundant in aviaries or in henhouses, where it can potentially cause some damages as a disease vector. Occasionally, it also can be a food-stored pest, mainly on cereals, flours, manioc, cotton, cacao and animal skins (DELOBEL & TRAN 1993).

Distribution. Cosmopolitan species.

TENEBRIONINI LATREILLE, 1802

Tenebrio LINNAEUS, 1758

LINNAEUS, 1758, Syst. Nat., 10^{ème} ed.: 417.

Tenebrio molitor LINNAEUS, 1758

(pl. 10, fig. 5)

Tenebrio molitor LINNAEUS, 1758, Syst. Nat., 10^{ème} ed.: 417.

Doha: Doha^②, F.E.C, 9.III.2003, K. MARDINI; Doha^①, F.E.C, 8. IV.2004, K. MARDINI.

This is the famous “meal worm”, a name that refers in reality to the insect’s larva. Frequently introduced and almost cosmopolitan, in bakeries, granaries, mills and food stores, adults and larvae feed on a wide variety of stored-products, especially decaying and moist cereal products. Thus, it can be harmful to corn flour, bran, bread, biscuits, pasta, dried fruits and sometimes to leather (DELOBEL & TRAN 1993). Damages are mainly due to the presence of excrements and exuviae, which reduce the food’s commercial value.

Distribution. Cosmopolitan species.

PHALERIINI BLANCHARD, 1845

Phaleria LATREILLE, 1802

LATREILLE, 1802, Hist. Nat. Crust. et Ins., 3: 162.

Phaleria (Epiphaleria) prolixa FAIRMAIRE, 1869

(pl. 11, fig. 1)

Phaleria prolixa FAIRMAIRE, 1869, Ann. Soc. ent. Fr. (4) 8: 797.

Al Jemaiiya: Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Doha: Umsht Island, 5.XII.2003, M. MARTINEZ.

Madinat Al Shamal: Al Ghariyah, seashore, 9.III.2003, on the beach, mainly under a dead dolphin, C. COCQUEMPOT.

Mesaieed: Mesaieed (Umm Said)^①, Sealine Beach Resort, 1–6.XII.2003, id., 19.IV.2004, M. MARTINEZ & K. MARDINI; Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI.

Shraoo Island: Arabo-Persian Gulf, about 70 km offshore from Doha, 26.IV.2004, E. PIERRE & M. MARTINEZ.

This crepuscular and nocturnal species occurs abundantly on the coastal sandy beaches of the Arabo-Persian Gulf, under algae and other debris like dead animals, or even garbage bags! The beetles remain hidden in the sand during the day.

Distribution. Described from Aden and distributed all around the Red Sea and along the coasts of Arabia, from Yemen to the Arabo-Persian Gulf. Also known from NW Madagascar: Nosy-Bé and Majunga Islands (ARDOIN 1969).

***Phthora* GERMAR, 1836**

GERMAR, 1836, Faun. Insect. Eur. Fasc., 18: 11.

***Phthora (Phthora) apicilaevis* (MARSEUL, 1876)**
(pl. 11, fig. 4)

Cataphronetis apicilaevis MARSEUL, 1876, L'Abeille, XVI, Nouvelles et faits divers (2^e ser.), 9: 36.

Al Jemailiya: Umm Bab, beach, 1.VI.2004, frontal lamp, L. SOLDATI.

Al Rayyan: Al Sheehaniyah, Al Khaiarin Botanical Reserve, 6.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT.

Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI.

Crepuscular and nocturnal species often attracted by U.V. light trap.

Distribution. Libya, Lower Egypt (GRIDELLI 1930), Tunisia (Normand, 1936) and Sinai Peninsula (LILLIG & PAVLIČEK 2003).

***Phthora salinae* sp. nov.**

(pl. 11, fig. 5; see description in chapter IV)

Doha: Umsht Island, 5.XII.2003, M. MARTINEZ.

Same behaviour as the previous species.

Distribution. At present, only known from Qatar.

CRYPTICINI BRULLÉ, 1832

***Pseudoseriscius* ESPAÑOL, 1950**

ESPAÑOL, 1950, Proceed.VIII Congr. Inter. Ent. Stockholm: 125.

***Pseudoseriscius griseovestis* (FAIRMAIRE, 1879)**
(pl. 11, fig. 3)

FAIRMAIRE, 1879, Rev. Mag. Zool.: 192 (15).

Madinat Al Shamal: Al Muatarad (sabkhat), small damaged hills and low salty depressions, 9.III.2003, C. COCQUEMPOT; Al Zubarah, Al Zubarah Fort (Museum), 31.III.2002, M. MARTINEZ.

Typically halophilous insect, living at the desert periphery and on offshore bar.

Distribution. up to now, the species was considered as a Northern African element, distributed from Algeria westwards to Egypt eastwards (ESPAÑOL 1949). Jordan, Kuwait, Cyprus (GRIMM 1991).

On average, specimens from Qatar have a very large size.

BELOPINI REITTER, 1917

***Centorus* Mulsant, 1854**

Mulsant, 1854, Col. de France, Latigènes: 272.

***Centorus (Centorus) csikii* subsp. *bagdadensis* REITTER, 1920**
(pl. 11, fig. 2)

Belopus (Centorus) bagdadensis REITTER, 1920, Bestim. d. Unterfam. Belopinae, Borinae, Tenebrioninae und Coelometopinae: 9.

Al Ghuwairiya: Rawdat al Faras, University Farm, 4.XII.2003, M. MARTINEZ.

Doha: Al Safliya Island, 5.XII.2003, M. MARTINEZ.

Umm Slal: Al Khuraitiyat, semi-desert area, rain puddles, 3 km N of Doha, 2.III.2003, C. COCQUEMPOT.

Semi desert zone, rain puddles. Typically halophilous insect.

Distribution. Described from Badga in Irak (REITTER 1920: 9) and also mentioned from Jordan (KOCH 1935b), Yemen (SKOPIN 1974) and Saudi Arabia (KASZAB 1982). Syria and Cyprus (GRIMM 1991).

IV. DESCRIPTIONS OF NEW TAXA AND SYSTEMATIC NOTES

1. Descriptions of new taxa

Mesostena ESCHSCHOLTZ, 1831

ESCHSCHOLTZ, 1831, Zool. Atlas, 4: 9.

Mesostena (Mesostena) angustata subsp. *deserticola* nov.
(pl. 2, fig. 3)

Holotype (♂). Qatar (Al Wakra), Al Kharrarah, 1,5 km N of the village, 1.VI.2004, beer pitfall traps, at the base of eroded hills topped by crust, L. SOLDATI & C. COCQUEMPOT (CBGP).

Paratypes. Same data as holotype, 5 ex. (1 CBGP, 1 FEC, 3 CS).

Al Ghuwairiya: Rawdat al Faras, University Farm, 04.XII.2003, M. MARTINEZ, 3 ex. (2 CBGP, 1 FEC).

Al Jemailiya: Al Jemailiya al Naeem, about 5 km NW of the village, 19.V.2003, K. MARDINI 4 ex. (1 CBGP, 3 FEC); Al Jemailiya al Naeem, about 2 km NW of the village, 5.III.2003, C. COCQUEMPOT, 1 ex. (CS).

Jeryan al Batna: Al Markhiyah, Al Rakkiyah Farm (fodder farm), 28.III.2002, M. MARTINEZ, 2 ex. (1 CBGP, 1 FEC); Umm al Shubrum area, near al Hamam Cave (Dahl al Hamam), 2.VI.2004, light trap, L. SOLDATI & C. COCQUEMPOT, 1 ex. (CBGP).

Madinat al Shamal: Al Ghariyah, seashore, 9.III.2003, K. MARDINI, 1 ex. (FEC).

Etymology. Latin, *desertus*, -a, *deserticola*, living in the desert.

Description. 12.5–16.0 mm. Deep black, fore-body, especially pronotum, glossy, the elytra dull.

Head: anterior margin of clypeus regularly and slightly convex without a protruding tooth in the middle. Carinae above the eyes well developed and sharp.

Frons convex, very finely punctate, limited laterally by two deep, densely and coarsely punctate, longitudinal impressions. Eyes not completely divided by the anterior process of temporae, living 3–4 free ommatidia at its narrowest point. Mentum large, transverse, with a prominent inverted V-shaped callus on disc. Transverse gular sulcus very deep. Antennae short, only reaching or barely surpassing the middle of pronotal length when directed backwards. Antennal segments quite thick.

Pronotum: subglobose and overall extremely finely punctate. Anterior margin interrupted in the middle, the posterior one thickened. Lateral carinae fine. Two, and sometimes more, dimples [fovea] can often be seen on the disc.

Prosternum and propleuron nearly smooth, with only a few sparse and coarse punctures near the procoxae.

Elytra: basal carina complete or nearly complete and continuous from the basal part of the epipleural carina to the scutellum. Elytral surface slightly wrinkled, dull and microreticulate, punctate-striate. Longitudinal rows very faint, with superficial punctures, progressively disappearing towards apex at the level of apical declivity. The intervals not convex.

Abdomen: shiny, very finely and sparsely punctate. Last abdominal segment with stronger punctation, the apex with a small longitudinal impression.

Legs: stout, with clavate femorae, especially the anterior ones. ♂ hind tibiae generally slightly curved.

Aedeagus: as in fig. 48.

Diagnosis. *Mesostena angustata deserticola* sp. nov. belongs to the subgenus *Mesostena* s. str. because of its shiny cuticle, the eyes angularly protuding from the head lateral outline and the underside of the hind tarsi longer and denser spiniferous.

The new subspecies differs at first glance from *Mesostena* (*Mesostena*) *puncticollis* SOLIER, 1835 and *Mesostena* (*Mesostena*) *yemenensis* SCUPOLA, 1994, by the lack of a median assymetrical tooth on the anterior margin of the clypeus (SCUPOLA 1994).

It is more closely related to *Mesostena* (s. str.) *angustata* (FABRICIUS, 1775) and can easily be recognised as follow:

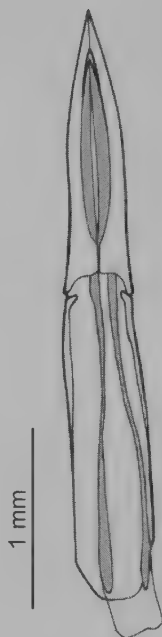


Fig. 48. Aedeagus of *Mesostena* (s. str.) *angustata* subspecies *deserticola* nov.

<i>Mesostena</i> (s. str.) <i>angustata</i> ssp. <i>angustata</i> F.	<i>Mesostena</i> (s. str.) <i>angustata</i> ssp. <i>deserticola</i> nov.
<ul style="list-style-type: none"> Elytral rows of punctures strong, well impressed, much lighter on apical declivity, but still clearly visible. Aedeagus of the same type, but slender. 	<ul style="list-style-type: none"> Elytral rows of punctures extremely fine, nearly obliterate, completely disappearing on apical declivity. Aedeagus (fig. 48).

The new subspecies is also very similar to *Mesostena* (s. str.) *angustata* ssp. *longicollis* LUCAS, 1858 from Algeria, but in the latter, the elytra are highly glossy and the pronotum is narrower in shape.

Like *M. puncticollis* SOL., it is a ground nocturnal species that stays hidden under stones, planks or any other kind of cover during the day.

Ammogiton PEYERIMHOFF, 1919

PEYERIMHOFF, 1919, Bull. Soc. ent. Fr.: 336.

Ammogiton schawalleri sp. nov.

(pl. 4, fig. 1)

Holotype (♂). Mesaieed: Mesaieed (Umm Said)^②, Sealine Beach Resort, 2.IV.2002, pitfall traps, M. MARTINEZ (CBGP).

Paratypes. Same data as holotype, 6 ex. (3 FEC, 1 CBGP, 1 CS); Mesaieed (Umm said), south Sealine Beach Resort, 6.III.2003, pitfall traps in dunes, C. Cocquempot, 3 ex. (1 CBGP, 2 CS); id., 3.III.2003, G. Sama, 1 ex. (SMNS); Mesaieed (Umm said)^①, Sealine Beach Resort, 6.XII.2003, pitfall traps, M. MARTINEZ, 1 ex (CS).

Saudi Arabia: Rub al Khali, 248 km S Salvah Camp, 2.V.1985, 22°40'N, 52°304'E, J. Grainger leg. (SMNS), 3 ex.

Etymology. Named in honour of Dr W. SCHAWALLER (SMNS), one of my German friends and colleagues, specialist of the Tenebrionidae, who suggested me first, that this species was probably new.

Description. 4.5–6.5 mm. Castaneous brown, head and Pronotum usually darker.

Head densely punctured. Epistome lobate, subtriangular, with a small blunt median tooth at tip and 5–6 additional teeth on each side (fig. 49). Eyes prominent, obliquely truncate in front and laterally wrapped by the anterior process of temporae (fig. 50). Mandibles asymmetrical: the upper median tooth of the right

one (seen from above) more developed, lobate and salient, than the left one. Mentum large, flat and quite densely punctured, each puncture carrying a short seta; anterior edge of mentum slightly emarginate. Gular sulcus transverse and deep (fig. 51).

Antennae quite long, barely surpassing $\frac{3}{4}$ of pronotal length when directed backward, but not reaching the base. Last three segments with patches of sensillae, the 9th asymmetrical, with such a structure only on the inner apical angle (fig. 52).

Pronotum: subglobose and overall coarsely punctate. Only the lateral sides are marginated. Angles rounded, the anterior ones weak, the posterior ones

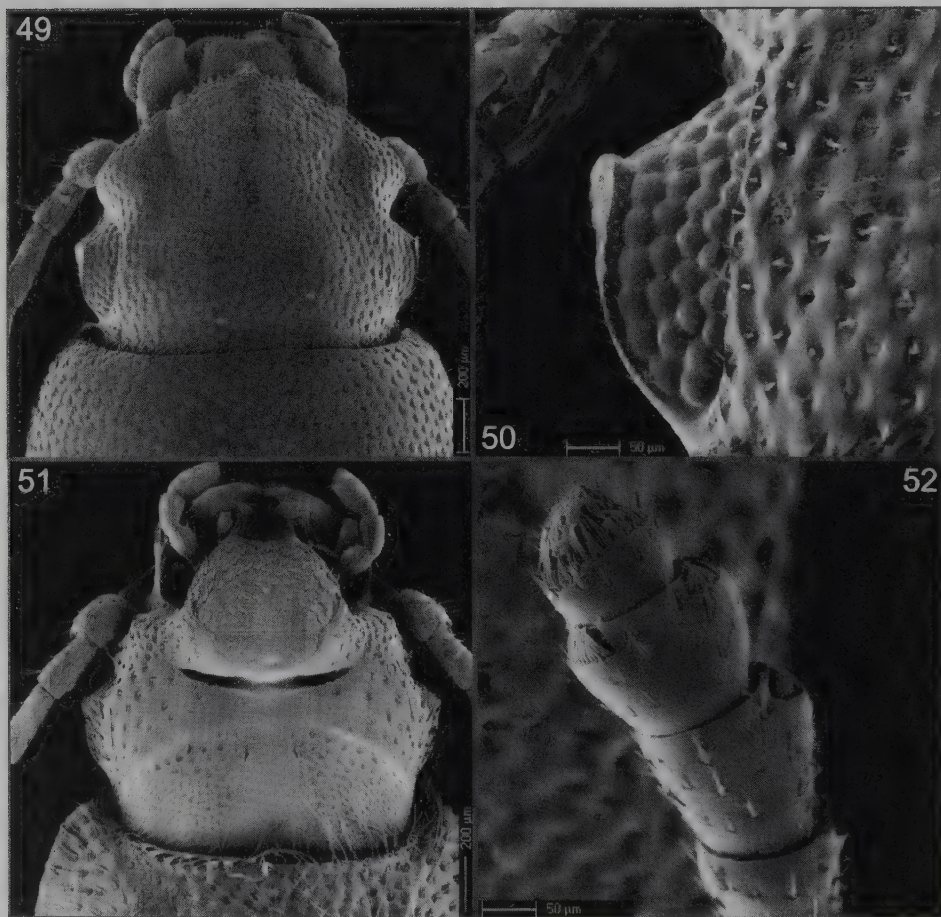


Fig. 49–52. (49) Head of *Ammogiton schawalleri* sp. nov. (seen from above); (50) eye of *Ammogiton schawalleri* sp. nov. (seen from above); (51) underside view of the head of *Ammogiton schawalleri* sp. nov.; (52) antennal segments 8–11 (apical ones) of *Ammogiton schawalleri* sp. nov.

strongly obtuse and nearly completely obliterate. Base curved; anterior edge nearly straight. Propleuron with sparse, deep, rounded punctures; the anterior half with long golden-yellow setae. Prosternum coarsely punctured, each puncture bearing a single long golden-yellow seta. Anterior edge densely fringed with similar setae. Prosternal apophysis vertically bent backward, after the anterior coxae.

Elytra: ovoid and posteriorly acuminate, the shoulders completely rounded. Elytral surface entirely covered with dense rasp-like punctation, much more pronounced and concentrated on apical declivity. Base immarginate. The scutellum is very small and impressed (fig. 53). Upper epipleural carina interrupted well before the shoulders (fig. 54) and invisible from above because of the strong elytral convexity. Along this epipleural carina, on the elytral side (not on the epipleural one), there is a row of deep fovea-like punctures (fig. 54, 55) from the center of which originates a short blond seta.

Meso- and metasternum uniformly covered with deep round punctures. Base of metasternum with a very short median longitudinal sulcus.

Abdomen: shiny, with the same type of punctuation as meso- and metasternum.

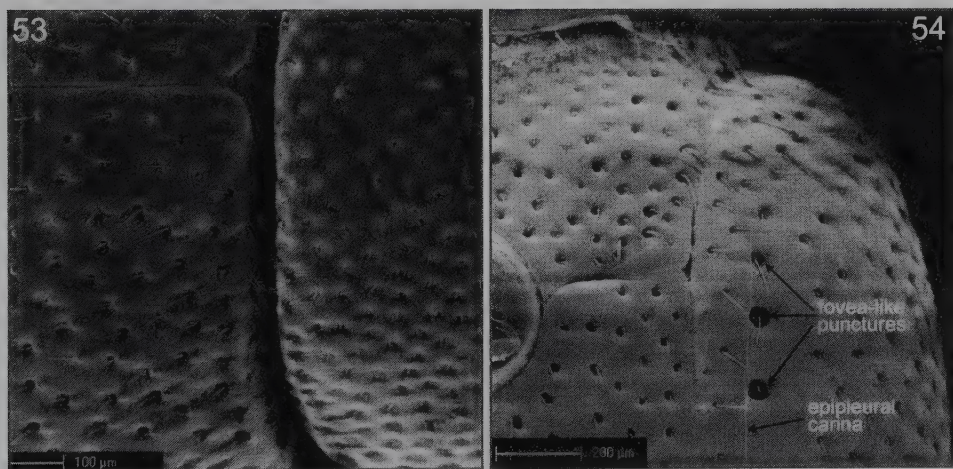


Fig. 53–54. (53) Base of pronotum and elytra (*Ammogiton schawalleri* sp. nov.); (54) underside view of elytra showing the epipleural carina (*Ammogiton schawalleri* sp. nov.).

Legs: femorae (fig. 56) with a fringe of blond hair on anterior and posterior faces. Outer apical angles of fore-tibiae strongly acute and salient. The apical angle itself is composed by the fusion of two small spurs (maybe sensillum chaeticum (?))³. Inner side of all tibiae fringed with long semi-erected bristles (fresh specimens). Claws of all the tarsi sub-equal, the internal ones slightly shorter than the exterior ones.

³ This character is only visible on fresh specimens.

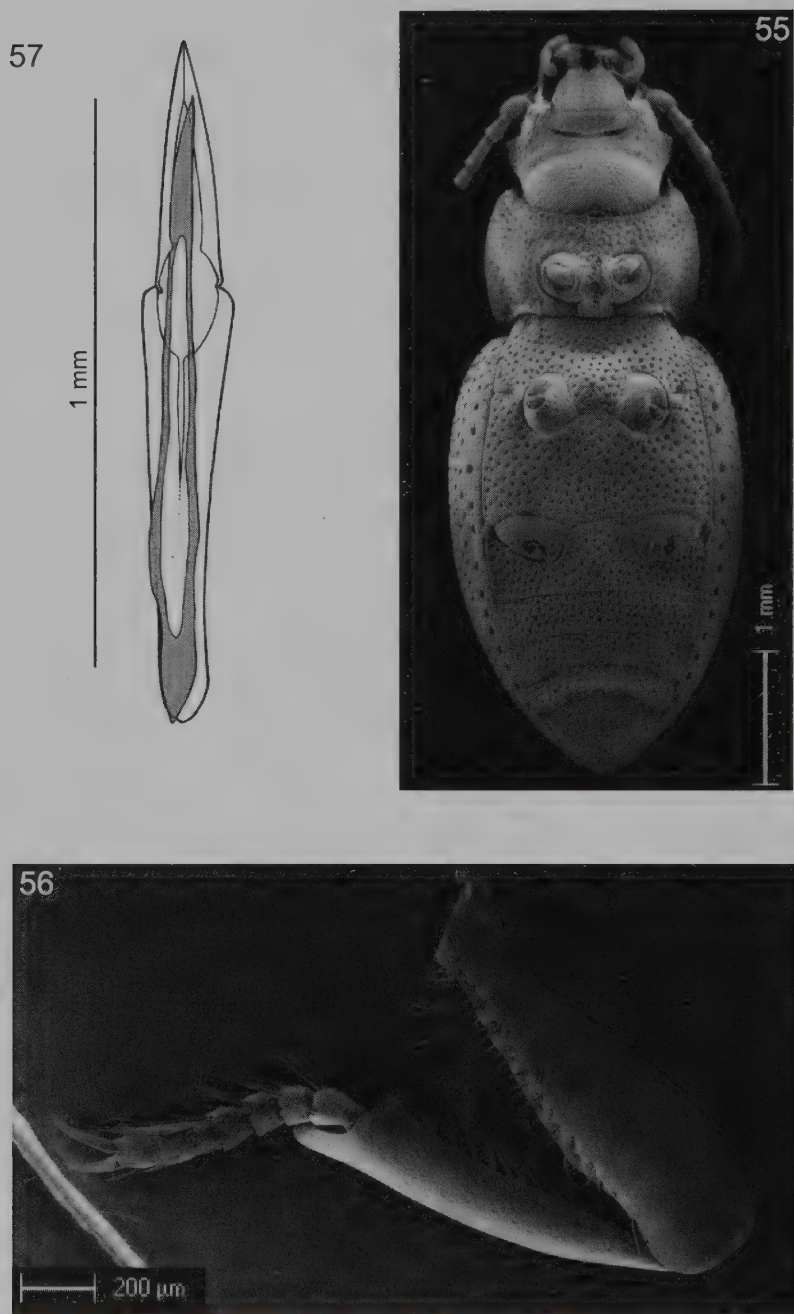


Fig. 55–57. (55) Underside view of the body of *Ammogiton schawalleri* sp. nov.; (56) underside view of the fore-leg of *Ammogiton schawalleri* sp. nov.; (57) aedeagus of *Ammogiton schawalleri* sp. nov.

Aedeagus: (fig. 57) the quite uniform shape of male genitalia within the genus *Ammogiton* is not very useful for specific separation.

Diagnosis. The new species differs from *Ammogiton sonyae* KASZAB, 1979 and *Ammogiton omanicum* SCHAWALLER, 1990, by the non-asymmetrical, normal, tarsal claws. Like *Ammogiton buettikeri* KASZAB, 1979, *A. schawalleri* sp. nov. has the pronotal and the elytral bases completely immarginate, these characters distinguishing both species from all the remaining ones (*Ammogiton viberti* PEYERIMHOFF, 1919, *Ammogiton peltieri* PEYERIMHOFF, 1924 and *Ammogiton jolyi* ESPAÑOL, 1951).

A. schawalleri sp. nov. can easily be separated from *Ammogiton buettikeri* KASZAB, 1979 as follow:

<i>Ammogiton schawalleri</i> sp. nov.	<i>Ammogiton buettikeri</i> KASZAB
<ul style="list-style-type: none"> • Deep castaneous brown. • Sides of the pronotum slightly, but completely rimmed. • Elytral rasp-like punctuation overall strong. • Epipleural carina of elytra with a longitudinal row of deep fovea-like punctures along internal side (fig. 54, 55). 	<ul style="list-style-type: none"> • Yellow-red, fore-body sometimes darker. • Pronotum without rim on the sides, except a residual length at the level of posterior angles. • Elytra with faint rasp-like punctation on disc, this structure becoming stronger toward the sides and apical declivity. • Epipleural carina simple, without longitudinal row of deep fovea-like punctures along internal side.

Ammogiton schawalleri sp. nov. is a typical sabulicolous nocturnal species that lives exclusively in sand dunes habitats. It is generally found still at the surface of the sand by the light of a lamp.

The distribution of Arabian species of *Ammogiton* have been recently summarized by SCHAWALLER (1990). First record for this genus in Qatar.

Girardius gen. nov.

Type species. *Micispa persica* BAUDI, 1875, by monotypy. Gender masculine.

Ethymology. Named in honor of Dr. C. GIRARD (MNHN) for his kind help and great experience in the recover of old and forgotten types in the rich collection of the Natural History Museum of Paris.

Diagnosis. Beetle entirely dull black, micro-shagreened; labrum, palpi, basal and apical segments of antennae and usually legs, with a brownish tint.

Upper face of mandibles without median tooth. Epistome lightly swollen, lobiform and prominent in front, the anterior margin truncate. Eyes large, ovoid, emarginate anteriorly by genal process. Head with supra-ocular longitudinal carinae. Pregular sulcus deep, transverse and arcuate. Post-temporal transverse impression complete on the underside of the cephalic capsule. Antennae finely pubescent, especially segments 5–11. Last segment identical in both sexes, not dimorphic.

Pronotum globose, completely marginate (anterior, lateral edges and base), longitudinally striate at the sides, progressively punctate-striate, then simply punctate on the disc. The broadest section is in the middle and it is equally narrowed towards anterior margin and base, lightly more anteriorly in the ♀♀. Anterior angles acute, salient; the posterior ones obtuse and smooth.

Elytra broadly oval, convex. Basal edge complete from the upper epipleural ridge to the suture, where it curves angularly backwards, so that the scutellum ends up in anterior position (REITTER's XIVth group).

Abdomen: inter-coxal process of first abdominal sternite completely and broadly marginate anteriorly. Anal sternite totally immarginate.

Legs quite long and slender. Posterior face of anterior tibiae flattened, except at the apex.

First tarsomere of hind tarsi equal in length than the two following ones together.

Sexual dimorphism: ♂♂, shape slender, with longer and curved anterior tibiae. ♀♀ more briefly ovoid, shorter.

Relationships: the new genus is closely related to *Micipsa* LUCAS, 1855, but there is no sexual dimorphism on the last segment of antennae in the ♂ of *Girardius* nov. The first segment of posterior tarsus is equal or subequal in length than the two following ones together (longer in *Micipsa*). It differs also from *Tentyronota* REITTER, 1900 by the absence of a median tooth on the upper face of mandibles. The elytral base is completely applied and contiguous to the one of pronotum, which is not the case in *Thraustocolus* KRAATZ, 1865.

The type species was originally described as *Micipsa persica* BAUDI, 1875.

1 syntype (♂) (MNHN). Persia merid. 1862–63, Coll. G. Doria / *Micipsa* sp. nov. / Paratype / *Micipsa persica* Bdi, C. GIRARD det. 1965.

Girardius persicus (BAUDI, 1875) (pl. 3, fig. 3).

***Apsheronellus* BOGAČEV, 1967**

BOGAČEV, 1967, Proc. Inst. Zool. Acad. Sc. Azerbaijan SSR, 16: 157.

***Apsheronellus arabicus* sp. nov.**

(pl. 5 fig. 3)

Holotype (♂). Mesaieed: Mesaieed (Umm Said), south Sealine Beach Resort, 31.V.2004, at night, L. SOLDATI (CBGP).

Paratypes. Same data as holotype, 12 ex.: 3 (CBGP), 4 (FEC), 1 (MIZ), 4 (CS).

Etymology. Latin, *arabicus*, Arabian.

Description. 3.8–4.0 mm. Upper surfaces of body reddish-brown, covered with a mottling of ash-grey and dark brown scales.

Head: covered with light-blond hair-like scales. Genae right angle-shaped. Two shallow depressions can be seen on each side of epistome at base of clypeal suture. Supra-ocular longitudinal folds absent. Eyes with sensilla optica between ommatidia (like in *Leichenium* spp.). Mentum very small and entirely covered with erected sensilla. Gula triangular, shagreened but glabrous. Antennae 11-segmented, progressively dilated toward apex, the last four segments nearly club-like.

Pronotum: largest before middle, with rounded sides. The posterior angles small, very acute and divergent. Anterior ones prominent. Anterior pronotal margin regular, straight in the middle. Three shallow depressions on basal margin of pronotum, the two lateral ones stronger. Outline of pronotum completely fringed with long erected hair-like scales.

Prosternum with long erected setae. Anterior part of propleura finely pubescent, the posterior part covered with sparse scales. Prosternal apophysis longitudinally impressed in middle, then prolonged in a very short salient tooth (in lateral view).

Elytra: coarsely punctuate-striate, each interval with a longitudinal row of semi-erected hair-like scales.

Abdomen: uniformly and regularly covered with small sensilla applied on tegument. The same for meso- and metasternum. Anterior margin of metacoxae densely fringed with contiguous sensilla.

Legs: Anterior tibiae with 3 teeth on external face, the apical one dentiform and large, the median and basal ones much smaller and equal in size. Fore tarsus, including claws, equal or shorter in length than anterior face (anterior margin) of anterior tibiae. Median tibiae with a pointed and curved tooth at the apex of internal face. Interior face of hind tibiae densely pilose.

Sexual dimorphism: ♂ with the abdomen slightly depressed in middle, mid-tibiae with an inner apical spine-like tooth and posterior tibiae with a fringe

of long golden semi-erected hair on the inner face. Abdomen of the ♀ evenly convex; mid- and posterior tibiae simple, without tooth or hair fringe.

Aedeagus: as in fig. 58, tegmen complete, without suture between phallobase and parameres, strongly narrowed apically and acute. Laciniae long, obliquely truncate at apex, not sharp.

Diagnosis. This new species of Leichenini belongs to the badly-known or forgotten genus *Apsheronellus* BOGAČEV, 1967 (= *Microleichenum* MEDVEDEV, 1973). Fortunately it has just been rehabilitated by MEDVEDEV and IWAN (2006: 613–617). My friend D. IWAN kindly compared one specimen of the new species I sent him to *Apsheronellus choresmensis* (MEDVEDEV, 1973): both species mainly differ by the shape of fore tibiae and pronotum. Unfortunately, nothing is said about sexual dimorphism, except for the aedeagus and ovipositor. Shape of fore tibiae and pronotum are also different in *Apsheronellus arenarius* BOGAČEV, 1967 (see figures in MEDVEDEV & IWAN (2006: 615–616). This was also confirmed by D. IWAN himself.

All the specimens were found at night, with the light of a frontal lamp, living on the salt-rich crust between the littoral sand dunes. Like the species of the neighbouring genus *Leichenum*, this insect seems to be more or less halophilous.

Distribution. At the moment, this new species is only known from Qatar.

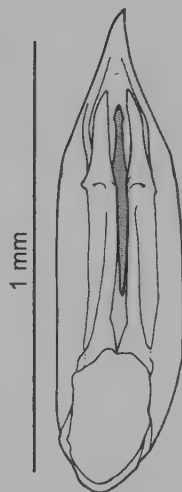


Fig. 58. Aedeagus of *Apsheronellus arabicus* sp. nov.

Trachyscelis LATREILLE, 1809

LATREILLE, 1809, Gen. Crust. et Ins., 4: 379.

Trachyscelis litoralis sp. nov.

(pl. 10, fig. 1)

Holotype (♂). Madinat Al Shamal: Al Ghariyah, seashore, 9.III.2003, C. COCQUEMPOT (CBGP).

Paratypes. Same data as holotype, 5 ex. (1 CBGP, 3 FEC, 1 CS).

Doha: Umsht Island, 5.XII.2003, M. MARTINEZ, 3 ex. (2 CS).

Al Khor: Al Khor area, west side of Ras al Matbakhah (Mangrove), 2 ex. (1 CBGP, 1 FEC).

Other specimen examined.

Iran: Bandar Abbas, 28.III.1965, Muséum Paris, Mission Franco-Iranienne, 1965 (MNHN).

Etymology. Latin, *litoralis*, from the shore, from the coast, the littoral.

Description. 3.5–4.0 mm. Overall light piceous brown. Upper face of head, pronotum and elytra shiny. Underside densely covered with long erected hair. Fully winged.

Head: Nearly completely smooth or impunctured, with only a few sparse shallow depressions. Clypeus with two small lateral teeth projecting frontward and contiguous with the two extremities of the clypeal suture. Median part of the anterior edge of the clypeus slightly emarginate and less protuding than the two lateral teeth (fig. 59). Clypeal suture deeply impressed, groove-like, wholly separating the clypeus from the rest of the head. Genae angularly salient outside the lateral contour of the head, in front of the eyes.

Antennae 10-segmented, with a distinct apical club, composed by the last enlarged five segments.

Pronotum: smooth or with an extremely fine, sparse and nearly invisible punctuation. Shape is transverse, with rounded sides and curved base. Anterior margin round neckline in front. Anterior angles obtuse and blunt, the posterior ones nearly obsolescent. Anterior edge, sides and base completely rimmed. Prosternum and propleura dull, granulate over a microshagreened background. Both are covered with long light-coloured erected hair, especially along the median longitudinal axis. Prosternal apophysis obliquely bent at the rear of the procoxae.

Scutellum broad and short; overall surface micro-shagreened.

Elytra: ovoid, punctate-striate. Each elytron with 8 striae, of which only the two inner ones are normally impressed and complete, the others progressively disappearing toward the sides. 3–4th striae superficials, 5th only visible on the anterior half, and 6–8th nearly obliterate and partially visible.

Mesosternum with a smooth and shiny area in the middle, highly contrasting with the surrounding matt surfaces of the sides.

Metasternum uniformly covered with micro-granules, each one originating a long erected bristle.

Abdomen: with quite the same appearance as the metasternum. Last visible abdominal segment (5th) slightly emarginate in the middle at apex and completely finely rimmed.

Legs: anterior and median femorae stout, the posterior ones strongly clavate. Fore-tibiae prolonged in a long apical outer lobe, with two strong digitate spurs (the inner one longer) at the apex of inner apical angle (fig. 60). Median tibiae slightly curved, the inner face with long semi-erected setae, whereas the outer face is densely covered with short, strong and obliquely disposed sensillae. Hind-tibiae similar to the median ones, but quite longer and not curved. First segment of median and hind-tarsi thickened and densely covered with sensillae on the under side. Second hind-tarsomere similarly inflate. Segments 2–4 of median tarsi and 3–4 of hind-ones, normal, not modified.

Aedeagus: as in fig. 61: a – sternal face, b – lateral face.

Diagnosis. the new species differs at first glance from *Trachyscelis tenuestriatus* FAIRMAIRE, 1885 by the more oblong shape. But the main and the more useful character to separate the two species is the anterior edge of the clypeus which shows two small, but very distinct, lateral teeth in *litoralis* sp. nov. (fig. 59), when such a structure is absent in *tenuestriatus* FAIRM. (fig. 62). Shape of the genae, in front of the eyes, is different too. If compared with *Trachyscelis aphodioides* LATREILLE, 1809, the latter has the upper surfaces gloss black, the clypeus is different, without two salient teeth, the anterior edge of pronotum isn't rimmed

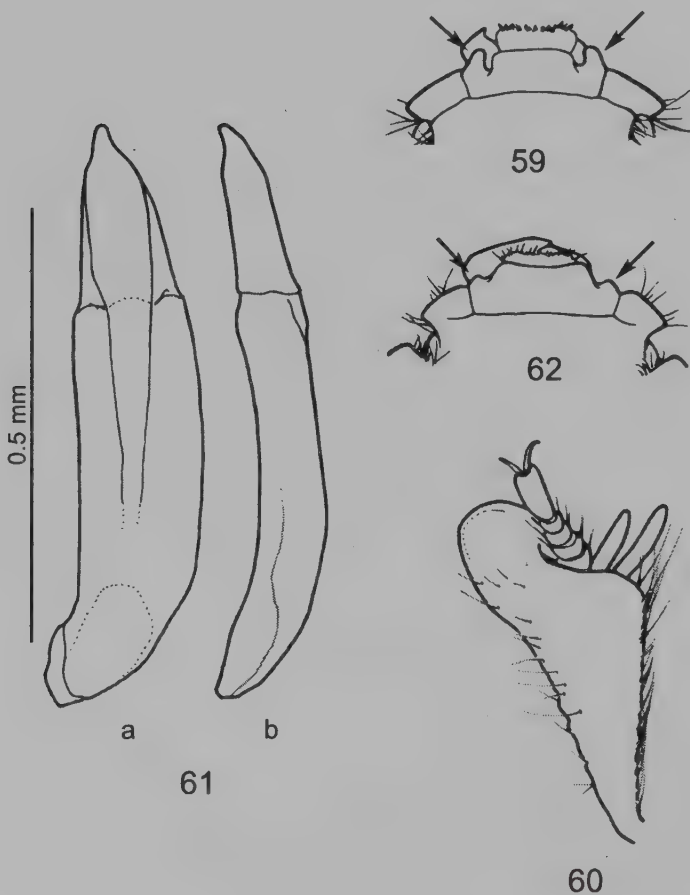


Fig. 59–62. (59) Clypeus showing the two lateral teeth (*Trachyscelis litoralis* sp. nov.); (60) foretibia lobate, with two strong digitate spurs (*Trachyscelis litoralis* sp. nov.); (61) aedeagus of *Trachyscelis litoralis* sp. nov. a – sternal face, b – lateral face; (62) median part of the anterior edge of the clypeus (*Trachyscelis tenuestriatus* FAIRMAIRE).

in the middle and the apical lobes of the anterior tibiae are rounded, not oblong-shaped.

Note. As other species (e. g. *Oxycara* (*Symphoxycara*) *breviusculum* FAIRMAIRE, 1892) living in the Red Sea area and described originally from Obock (= Djibouti), *Trachyscelis tenuestriatus* Fairmaire has also been many times (erroneously?) mentioned from the coastal zones of the Arabo-Persian Gulf.

***Phthora* GERMAR, 1836**

GERMAR, 1836, Faun. Insect. Eur. Fasc., 18: 4.

(= Subgenus *Clypeophthora* SOLDATI, 2003)

SOLDATI F. & L. SOLDATI, 2003, Bull. Soc. Linn. Bordeaux 31, (1): 1.

***Phthora salinae* sp. nov.**

(pl. 11, fig. 5)

Holotype (♂). Doha: Umsht Island, 5.XII.2003, M. MARTINEZ (CBGP).

Paratypes. Same data as holotype, 4 ex. (1 CBGP, 1 FEC, 2CS).

Etymology. Latin, *salinae*, saline, salt marsh.

Description. 4–5 mm. Body narrow and parallel. Overall ferruginous brown, shiny. Fully winged.

Head: covered with extremely dense, coarse and strigose punctuation over a dull, microshagreened background. Clypeus in the continuation of the genae, slightly curved and convex, not truncate.

Antennae 11-segmented, slender, as long as the widest transversal section of head.

Pronotum widest at the level of the first anterior third. It is covered with coarse punctures that become progressively denser and closer from the base to the anterior margin and angles, where the structure of cuticle is similar as the head's one. On the basal half, spaces between punctures are shiny and larger, while they become more and more narrow and micro-shagreened anteriorly. Sides and base completely rimmed. On the curved and concave anterior margin, the rim is very fine and seems to disappear in the middle. There are two short longitudinal and parallel impressions on both sides of the middle of the basal part of the pronotum. Propleura and prosternum with a dense rasp-like superficial punctuation from which originates short golden-yellow bristles. On the median longitudinal zone, this pubescence is quite longer and semi-erected. Prosternal apophysis nearly flat, barely inclined backwards and not prolonged.

Elytra: lateral edges entirely visible from above. Humeral angles right, with only the top rounded. Each elytron with 9 superficially engraved striae, generally

blurred toward the apex, but still visible, especially the first inner one. On elytra's tip, the suture is deeply and widely impressed. Intervals with 1–2 irregular rows of punctures on the disc. Meso- and metasternum coarsely punctuate over a shiny background. Each puncture originates a short bristle. Median longitudinal sulcus of metasternum obliterate anteriorly.

Abdomen: with quite the same appearance as the metasternum, but with finer punctuation and the short bristles directed backwards. Anal sternite (5th abdominal segment) completely and finely rimmed along the external margin.

Legs: anterior femorae evidently clavate, the median and posterior ones stout. Fore-tibiae strongly dilated and lobate apically; the widest section quite as large as the tarsus, except for the claws. Median tibiae progressively and moderately enlarged, like the posterior ones in the ♀♀, whereas the latter are thin on the first half and suddenly dilated toward the apex in the ♂♂.

Aedeagus: as in fig. 63: a – sternal face, b – lateral face.

Diagnosis. The new species is closely related with *Phthora tenuis* (MARSEUL, 1876) and *Phthora millingeni* (REITTER, 1899) (cf. infra). Nevertheless, they can easily be separated as follow:

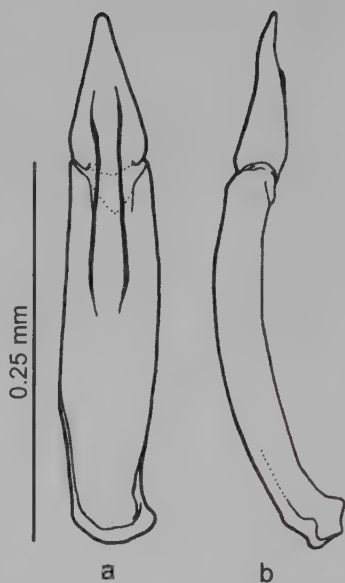


Fig. 63. Aedeagus of *Phthora salinae* sp. nov.: a – sternal face, b – lateral face).

<i>Phthora tenuis</i> and <i>Ph. millingeni</i>	<i>Phthora salinae</i> sp. nov.
<ul style="list-style-type: none"> • Antennae distinctly shorter than the widest transversal section of head. • Clypeus truncate anteriorly. • Lateral contour of genae angular and more salient outwards. • Sexual dimorphism of ♂♂ hind-tibiae weak. • Aedeagus (of <i>millingeni</i>) (fig. 64). 	<ul style="list-style-type: none"> • Antennae as long as the widest transversal section of head. • Clypeus curved and rounded anteriorly. • Lateral contour of genae regularly curved and not salient outwards. • Sexual dimorphism of ♂♂ hind-tibiae strongly developed. • Aedeagus (fig. 63).

Ph. salinae belongs to a species-group in which elytral striae, especially the first inner one, are still visible and well defined up to the apex. In the contrary,

within the *apicilaevis*-group (*Ph. apicilaevis* (MARSEUL, 1876), *Ph. angusta* (WOLLASTON, 1861) and *Ph. fossoria* (WOLLASTON, 1861)), the striae become obsolescent from the level of the apical quarter of elytra and even the first inner one disappears.

Ph. salinae also differs from the remaining Mediterranean species (*Ph. crenata* GERMAR, 1836, *Ph. confluens* REITTER, 1894, *Ph. reitteri* ssp. *cypria* GRIMM, 1991 and *Ph. tronqueti* SOLDATI, 2003) by its distinctly longer antennae, slender and more elongate shape, constantly paler ferrugineous colour, strongly dimorphic posterior tibiae of the ♂ and other combined characters.

Phtora reitteri SEIDLITZ, 1884 has an overall matt-microshagreened upper body cuticle, which is not the case in *salinae* sp. nov.

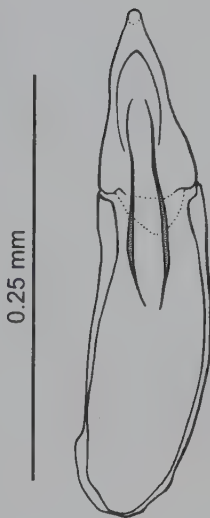


Fig. 64. Aedeagus of *Phtora millingeni* (REITTER)

2. Systematic notes and lectotype designation

Falsocatomulus PIC, 1914

PIC, 1914, L'Echange, 30: 10.

Falsocatomulus euphraticus PIC, 1914

(pl. 4, fig. 2)

Falsocatomulus euphraticus PIC, 1914, L'Echange, 30: 10.

Lectotype (here designated to stabilize the taxonomic status of this species): sex unknown (probably a ♂, but not dissected), Euphrate/Type/TYPE/*Falsocatomulus euphraticus* PIC/Muséum Paris, coll. M. PIC/*Falsocatomulus euphraticus* PIC, LECTOTYPE, SOLDATI design. 2004. (MNHN).

Paralectotypes. Sex unknown (probably a ♀); Euphrate (*angustalis* ?)/TYPE/*Falsocatomulus euphraticus* PIC gen. prope *Catomulus*...? indecipherable)/Muséum Paris, coll. M. PIC/*Falsocatomulus euphraticus* PIC, PARALECTOTYPE, SOLDATI design. 2004. (MNHN).

Mesopotamie: Euphrate/TYPE/Muséum Paris, coll. M. PIC/*Falsocatomulus euphraticus* PIC, PARALECTOTYPE, SOLDATI design. 2004. (MNHN).

Monotypical genus.

***Trachyderma* LATREILLE, 1829**

LATREILLE, 1829, in Cuvier, Règne Anim., 4: 7.

***Trachyderma parvicollis* (BAUDI, 1876)**

(pl. 6, fig. 1)

Ocnera parvicollis BAUDI, 1876, Dt. Ent. Zeitschr., XX (1): 5.

Loc. cl. «Persia mer.»

Type (♀): Persia merid. 1862–63, Coll. G. Doria / Typus / *Ocnera parvicollis* BAUDI / *Ocnera parvicollis* BAUDI ♀ / Museo Civ. Genova / Typus *Ocnera parvicollis* BAUDI, 1876. (MCG).

This specimen can rightfully be considered as the type-specimen: it corresponds very well to the original description, in which the insect's size (« Long. 7 lin. ») is given without interval, which points out that BAUDI had probably a single specimen in front of his eyes when he described *T. parvicollis*.

=*Trachyderma perseae* (BAUDI, 1876) syn. nov.

Ocnera perseae BAUDI, 1876, D. Ent. Zeitschr. XX (1): 6.

Loc. cl. «Persia mer.»

Types: (♂) Persia merid. 1862–63, Coll. G. Doria / ♂ / Typus / *Ocnera perseae* BAUDI, ? n n. Mus. Gen. VII. 687 / *O. perseae* BAUDI sp. nov. / SYNTYPUS *Ocnera perseae* BAUDI, 1876 / Museo Civico di Genova (MCG); (♂) Persia merid. 1862–63, Coll. G. Doria / Museo Civ. Genova / SYNTYPUS *Ocnera perseae* BAUDI, 1876 / *Ocnera perseae* BAUDI, (MCG); (♀) Persia merid. 1862–63, Coll. G. Doria / ♀ / SYNTYPUS *Ocnera perseae* BAUDI, 1876 / Museo Civico di Genova / (MCG).

Note. Size highly variable (17–25 mm), small specimens show a proportionally less transverse pronotum, hence the name *parvicollis* (lat. *parvus*, small). In fact, it must be the same species, as no other morphological character can separate the small examples (*parvicollis*) from the larger ones (*perseae*), even the aedeagus, which is strictly identical. Furthermore, the two phenotypes are sympatric. This phenomenon is obviously constant within all the populations we sampled. So, it is easy to understand why Baudi di Sèlve re-described the same species twice. The joint study of the types and of the material put at our disposal, essentially by the Muséum National d'Histoire Naturelle of Paris and the

Museo Civico di Storia Naturale «Giacomo Doria» of Genova, leads us to consider *T. persea* BAUDI as a junior synonym of *T. parvicollis* BAUDI.

A future DNA analysis of material preserved in alcohol could also help to clarify the taxonomical position of both taxa.

***Blaps* FABRICIUS, 1775**

FABRICIUS, 1775, Syst. Ent.: 254.

***Blaps kollarii* SEIDLITZ, 1893**

(pl. 5, fig. 2)

Blaps kollarii SEIDLITZ, 1893, Naturg. Ins. Deutschl., 5: 263, 305.

Taxonomic note. As GRIDELLI (1953) wrote: the prosternum is bent downwards behind the anterior coxae and not «hinter den Vorderhüften Dachförmig» and the anal segment clearly shows a little yellowish hair-tuft apically in both sexes, in the contrary of the original description (SEIDLITZ, 1893).

***Phtora* GERMAR, 1836**

GERMAR, 1836, Faun. Insect. Eur. Fasc., 18: 4.

***Phtora apicilaevis* (MARSEUL, 1876)**

(pl. 11, fig. 4)

Cataphronetis apicilaevis MARSEUL, 1876, L'Abeille, XVI, Nouvelles et faits divers (2^e ser.) 9: 36.

Holotype (♀): *Cataphronetis apicilaevis* Pt. Saïd, ? 73 ? (yellow rounded labelled) / *Cataphronetis apicilaevis* Marseul, HOLOTYPE ♀. (MNHN). Loc. cl.: «Port Saïd, Egypte.»

It is highly probable that *Ph. apicilaevis* is a junior synonym of *Phtora angusta* WOLLASTON, 1861 (= *Phtora fossoria* WOLLASTON, 1861?).

***Phtora tenuis* (MARSEUL, 1876)**

Cataphronetis tenuis MARSEUL, 1876, L'Abeille, XVI, Nouvelles et faits divers (2^e ser.) 9: 36.

Holotype (♂): *Cataphronetis tenuis*, Jeddah 74 ? (yellow round label) / *Cataphronetis tenuis* MARSEUL, HOLOTYPE ♂. (MNHN).

Phthora millingeni REITTER, 1899

Phthora millingeni REITTER, 1899, Wiener Ent. Zeit., 18: 159.

Holotype (♀): Millingen, Mesopotam / 61 / Donnés Reitter / Type / *Ph. millingeni* Reitt. / *millingeni* m Reitt. / Muséum Paris, Coll. M. PIC / TYPE / *Phthora* (*Cataphronetis*) *millingeni* REITTER, HOLOTYPE ♀. (MNHN).

Phthora millingeni is probably a synonym of *Phthora tenuis*, in spite of a quite important difference in size. Apart from this, both specimens are very similar and show the same synapomorphies. Maybe, the type of *millingeni* is simply the ♀, and the one of *tenuis*, the ♂ of the same species? The examination of more than two examples is clearly needed.

Both Types of *Ph. tenuis* and *Ph. millingeni* are preserved into the general collection of Tenebrionidae of the MNHN. I have cleaned, restored and dissected them. Genitalia have been placed in small glass capsules filled with glycerin and pinned under the card on which each specimen is glued.

Unfortunately, the type of *Phthora aegyptiaca* REITTER, 1899, remains unknown to me. Perhaps is it somewhere within PIC's still unclassified collection (MNHN)?

The genus *Phthora* GERMAR obviously needs a revision.

Originally, SOLDATI and SOLDATI (2003) described a new subgenus, *Clypeophthora* (type-species: *Ph. tronqueti* SOLDATI, 2003), mainly because of the peculiar truncate clypeus and the shape of the external apical lobe of the anterior tibiae. At that time, we considered those characters as sufficiently important apomorphies to support the creation of a new subgenus. But, while studying the types of *Ph. tenuis* and *Ph. millingeni*, I realised that the clypeus was also truncate in these taxa. Considering the shape of the external apical lobe of the foretibiae, this character may be variable within the genus, but it has a good specific value, especially in the case of *Ph. tronqueti* SOLDATI, which remains a valid species, clearly distinct from all the other representatives of the same genus.

V. INDEX OF THE COLLECTING SITES

Localities	Provinces	Collecting zones	Latitude (N)	Longitude (E)
Abu Samrah	Jeryan al Batna	Qatar / Saudi Arabia S.-W. border – Seaside	24°47.422'	50°52.134'
Al Ghariyah	Madinat al Shamal	Seashore	26°04'51.2" = 26°04.853'	51°21'26.7" = 51°21.445'
Al Ghariyah area	Madinat al Shamal	≈ 1 km north of Al Ghariyah – Small damaged hills, ≈ 500 m from the sea	–	–
Al Ghariyah area	Madinat al Shamal	Seashore, ≈ 0,5 km south of Ras Umm Hasaa	26°05.731'	51°21.499'
Al Jemaliya al Naeem	Al Jemaliya	≈ 5 km N.-W. of the village	25°39.913'	51°02.414'
Al Jemaliya al Naeem	Al Jemaliya	≈ 2 km N.-W. of the village	25°38'54.8"	51°03'47.1"
Al Karaanah	Jeryan al Batna	Near the northern entry of the village	–	–
Al Khararah	Al Wakra	≈ 1,5 km north of the village – Base of residual hills topped by crust	24°55'00.9"	51°10'20.8"
Al Khararah	Al Wakra	Inside village	24°54.277'	51°10.421'
Al Khattiyah	Al Jemaliya	Sabkhat al Mataar	25°24.930'	50°49.695'
Al Khafaj	Al Khor	Private farm	25°39.131'	51°22.340'
Al Khafaj area ^①	Al Khor	Palm trees plantations – Along highway	25°39.562'	051°23.499'
Al Khafaj area ^②	Al Khor	Palm trees plantations – Along highway	25°39'30.8"	51°23'31.2"
Al Khor area	Al Khor	West side of Ras al Matbakhah (Mangrove)	25°40.858'	51°33.258'
Al Khor Bay	Al Khor	Ras Umm Abdah (Great mangrove) – Rocky escarpments	–	–
Al Khuraitiyat	Umm Slal	Semi-desert area, rain puddles, 3 km N. of Doha	25°22'52.5"	51°26'30.5"
Al Markhiyah	Jeryan al Batna	Al Rakkiyah Farm (fodder farm)	25°00.700'	51°10.570'
Al Maszhabiya area ^①	Jeryan al Batna	Desert, S.-W. Qatar	24°44.145'	50°53.096'
Al Maszhabiya area ^②	Jeryan al Batna	Desert, S.-W. Qatar	24°44.541'	50°52.561'
Al Muatarad (Sabkhat)	Madinat al Shamal	North of Al Muatarad, small damaged hills and low salty depressions	26°06'32.1"	51°20'17.7"
Al Muraydah	Madinat al Shamal	Wadi Sadria Farm	25°54.007'	51°19.642'

Localities	Provinces	Collecting zones	Latitude (N)	Longitude (E)
Al Nasraniyah	Al Jemaliya	N.-W. village, very small hills with trees and bushes	25°26'05.8"	51°04'20.7"
Al Safliya Island	Doha	Arabo-Persian Gulf, N.-E. of Doha Bay	25°20.556'	51°34.658'
Al Sheehaniyah	Al Rayyan	Private farm of Sheikh Saoud Bin Ali Al Thani	—	—
Al Sheehaniyah	Al Rayyan	Al Husayniyah Farm	—	—
Al Sheehaniyah	Al Rayyan	shrubby spontaneous vegetation	—	—
Al Sheehaniyah	Al Rayyan	South of Al Sheehaniyah, arid natural area,	—	—
Al Sheehaniyah	Al Rayyan	Al Khalarin Botanical Reserve	25°21.284'	51°14.384'
Al Sheehaniyah	Al Rayyan	Farm of Arab Company for Agricultural Production	25°22.910'	51°15.357'
Al Sheehaniyah	Al Rayyan	Private farm, in a field of melons	—	—
Al Wakra area	Al Wakra	Seashore S.-E. of Al Wakra	25°08.125'	51°37.062'
Al Wibran	Al Rayyan	Private farm of Sheikh Saoud Bin Ali Al Thani	—	—
Al Zubarah	Madinat al Shamal	Al Zubarah Fort (Museum)	25°58.618'	51°02.726'
Doha	Doha	waste ground in front of flats, north of Doha	—	—
Doha ^①	Doha	Friends of the Environment Center (F.E.C.)	25°17.780'	51°29.781'
Doha ^②	Doha	Friends of the Environment Center (F.E.C.)	25°17.740'	51°29.781'
Dohat Fashakh (northern coast)	Al Jemaliya	wooded zone	25°39'23.0"	50°57'18.7"
Dohat al Husain strait, N.-E. coast	Al Jemaliya	Seaside, ≈ 15 km N.-W. of Al Jemaliya al Naeem	25°39'35.7"	50°54'15.5"
Khor al Adaid	Mesaieed	Seashore	24°38.757'	51°13.492'
Khor al Adaid area	Mesaieed	Hafway north shores of Khor al Adaid/ Al Qaseerah water well	24°40.920'	51°13.568'
Markaz Sawda Natheel	Jeryan al Batna	1 km north, base of barkhans	—	—
Mesaieed (Umm Said) ^①	Mesaieed	Sealine Beach Resort	24°51.824'	51°30.268'
Mesaieed (Umm Said) ^②	Mesaieed	Sealine Beach Resort	24°50.819'	51°30.502'

Localities	Provinces	Collecting zones	Latitude (N)	Longitude (E)
Mesaieed (Umm Said)	Mesaieed	South Sealine Beach Resort	24°51'04.2"	51°30'20.7"
Nakhlat al Oraiqa area	Jeryan al Batna	Palm trees plantations. Near the border, S.-W. Qatar	24°42.383'	50°53.183'
Nakhlat al Oraiqa area	Jeryan al Batna	S -W Qatar – near the Saudi Arabian border, desert & fodder farm	around 24°42' to 24°40'	around 50°53' to 50°54'
Rawdat al Faras	Al Ghuwairiya	University Farm	25°48.278'	51°20.826'
Rawdat Kharijah	Jeryan al Batna	Near Rawdat Kharijah farm	25°14.254'	51°08.931'
Sailiyah Lake ^①	Al Rayyan	Artificial lake (≈ 23 km S.-E. from Doha)	25°09.377'	51°21.380'
Sailiyah Lake ^②	Al Rayyan	Artificial lake (≈ 23 km S.-E. from Doha)	25°09.267'	51°21.647'
South of Qaryat al Muhana – Road Umm Bab / Jelaihah	Al Jemaliya	damaged hills near the sea	25°10'42.0"	50°48'19.5"
Trainah	Al Wakra	Lucerne field farm, south village of Trainah	24°45.280'	51°12.540'
Trainah area	Al Wakra	3–4 km S.-E. of Trainah	24°43.888'	51°13.472'
Umm al Shubrum	Jeryan al Batna	Private farm	25°09'55.33"	51°13'21.63"
Umm al Shubrum area	Jeryan al Batna	Near al Hamam Cave (Dahl al Hamam), light trap (uv)	25°10'20.7"	51°12'54.0"
Umm Aneeq	Al Khor	East of the village, artificial damp zone	25°42.596'	51°32.871'
Umm Bab	Al Jemaliya	Seaside	25°12'26.3"	50°46'24.6"
Umm Bab	Al Jemaliya	Seaside (small dunes) and palm grove	25°12'26.3"	50°46'24.6"
Umsht Island	Doha	Arabo-Persian Gulf – East of Doha Bay	25°17.683'	51°38.752'
Wadi Jallal	Al Wakra	abandoned farm	–	–
Zekreet	Al Jemaliya	West shore, northern area of Zekreet	25°32.104'	050°49.342'

VI. ACKNOWLEDGEMENTS

For the loan of material, especially type-material, which has been very important to realize this study, I wish to thank Dr. C. GIRARD (MNHN), Dr. R. POGGI (MCG), Dr. W. SCHAWALLER (SMNS), and also Mr. C. BESNARD who lent me three paratypes of *Gonocephalum besnardi* KASZAB of his private collection.

Many thanks to our Qatari collaborators of the F.E.C., for their kind assistance and hospitality: Dr. S. AL HAJARI, Dr. S. ABASSI, Mr. K. MARDINI and the late Dr. A. BABI, one of the main initiator of the project on the Qatar side.

I am particularly indebted to my colleagues of the CBGP, who actively participate to the collecting trips in Qatar and to the whole cooperation project: C. COCQUEMPOT, E. PIERRE, who realized the localities index after a careful review, of the corresponding collection labels, and M. MARTINEZ the French responsible and initiator of the project. My friends H.-P. ABERLENC and Dr. G. KERGOAT, for photographic assistance and for testing the keys.

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VIII. LEXICON

Canthus

Noun. (Greek, *kanthos* = corner of eye) Pl., Canthi. Chitinous process of gena more-or-less dividing rearwards the eye into an upper and lower half.

Claviform

Adj. (Latin, *clava* = club; *forma* = shape) Club-shaped.

Detritivorous

Adj. (Latin, *detritus* = rubbed; *vorare* = to devour; -*osus* = with the property of) Organisms that feed upon detritus.

Eremophilous

Adj. (Greek, *eremos* = desert; *philein* = to love; Latin, -*osus* = with the property of) Desert loving. Animals or plants that live in desert or arid areas.

Explanate

Adj. (Latin, *ex* = out; *planare* = to make plain) Flattened. Generally applied to the margin of the Pronotum that are sometimes explanate (e. g. Coleoptera Lampyridae).

Halophilous

Adj. (Greek, *hals* = salt; *philein* = to love; Latin, -*osus* = with the property of) Salt loving. Organisms that live in or near salt marshes, or near the seashore.

Inermis

Adj. (Latin, *inermis* = unarmed) Not armed. Without teeth, spines or any other sharp process.

Mycophagous

Adj. (Greek, *mykes* = fungus; *phagein* = to eat; Latin, -*osus* = with the property of) Pertaining to organisms that feed on fungi.

Myrmecophilous

Adj. (Greek, *myrmex* = ant; *philos* = loving; Latin, -*osus* = with the property of) Insects that live in ant nests.

Necrophagous

Adj. (Greek, *nekros* = dead; *phagein* = to eat; Latin, -*osus* = with the property of) Organisms that feed on dead and decaying matter.

Paramere

Noun. (Greek, *para* = paired; *meros* = body) One of paired lateral processes or lobes of the phallobase.

Phallobase

Noun. (Greek, *phallus* = penis; base = step) The proximal sclerotized part of the male aedeagus.

Psichaphagous

Adj. (Greek, *psicha* = crumb; *phagein* = to eat; Latin, *-osus* = with the property of) Organisms that feed upon crumbs.

Sabulicolous

Adj. (Latin, *sabulum* = sand; *colere* = to inhabit) Sand-loving. Organisms that live on the surface or into the sand.

Saprophagous

Adj. (Greek, *sapros* = rotten; *phagein* = to eat; Latin, *-osus* = with the property of) Organisms that feed upon dead and decaying (animals or plant) matter.

Scape

Noun. (Latin, *scapus* = stalk, stem; Greek, *skapos* = stalk) the basal segment of antennae.

Sympatric

Adj. (Greek, *syn* = together; *patra* = homeland; *-ic* = characterized by) Species or populations with overlapping geographical distribution.

Synanthropic

Adj. (Greek, *syn* = together; *anthropos* = humans) Intimately associated with humans.

Testaceous

Adj. (Greek, *testa* = burnt piece of clay; *-aceous* = like) A dull brick red or yellowish-depigmented colour.

Xerophilous

Adj. (Greek, *xeros* = dry; *philein* = to love) Pertaining to organisms that lives in arid or dry conditions.

IX. TRIBES, GENERA AND SPECIES INDEX

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Zophosis LATREILLE, 11, 40

PLATES



1



2



3



4

Phot. 1–4. 1 – *Apentanodes arabicus* (KIRCHSBERG); 2 – *Erodius (Eodirosis) sauditus* KASZAB;
3 – *Imatismus (Curimosphenia) arabicus* KASZAB; 4 – *Zophosis (Septentriophosis) complanata* SOLIER.



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4

Phot. 1-4. 1 - *Prochoma* (*Oxypistoma*) *bucculenta* KOCH; 2 - *Hyperops* (*Belutschistanops*) *pygmaea* subsp. *arabica* (KOCH); 3 - *Mesostena* (*Mesostena*) *angustata* subsp. *deserticola* nov.; 4 - *Mesostena* (*Mesostena*) *puncticollis* SOLIER.



Phot. 1–5. 1 – *Microdera (Tentyrodera) marginata* ssp. *deserticola* (BLAIR); 2 – *Tentyrina palmeri* ssp. *thomasi* (BLAIR); 3 – *Girardius persicus* (BAUDI); 4 – *Oxycara (Symphoxycara) hansbremeri* LILLIG; 5 – *Oxycara (Oxycara) buettikeri* KASZAB.



Phot. 1-4. 1 - *Ammogiton schawalleri* sp. nov.; 2 - *Falsocatomulus euphraticus* PIC;
 3 - *Adesmia* (*Macradesmia*) *cancellata* (KLUG); 4 (♂ ♀) - *Adesmia* (*Oteroscelis*) *khaliensis*
 BLAIR.



Phot. 1-4. 1 - *Akis spinosa* (LINNAEUS); 2 - *Blaps kollarii* SEIDLITZ; 3 - *Apsheronellus arabicus* sp. nov.; 4 - *Paraplatyope arabica* ssp. *arabica* (BLAIR).



Phot. 1-4. 1 – *Trachyderma parvicollis* (BAUDI); 2 – *Thriptera kraatzi* HAAG-RUTENBERG;
 3 – *Prionothea coronata* ssp. *ovalis* ANCEY; 4 – *Pimelia arabica* KLUG.



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Phot. 1-5. 1 – *Cheiroides* (s. str.) *sardous* GENÉ; 2 – *Cheiroides* (*Histiaea*) *asperulus* (REITTER);
3 – *Cheiroides* (*Pseudanemia*) *brevicollis* (WOLLASTON); 4 – *Dilamus* (*Dilamus*) *arabicus* KASZAB;
5 – *Prodilamus* *mandli* (KASZAB).



Phot. 1-6. 1 – *Gonocephalum besnardi* KASZAB; 2 – *Gonocephalum setulosum* (FALDERMANN); 3 – *Gonocephalum rusticum* (OLIVIER); 4 – *Gonocephalum patrule* (ERICHSON); 5 – *Gonocephalum consobrinum* BLAIR; 6 – *Gonocephalum prolixum* (ERICHSON).



1



2



3

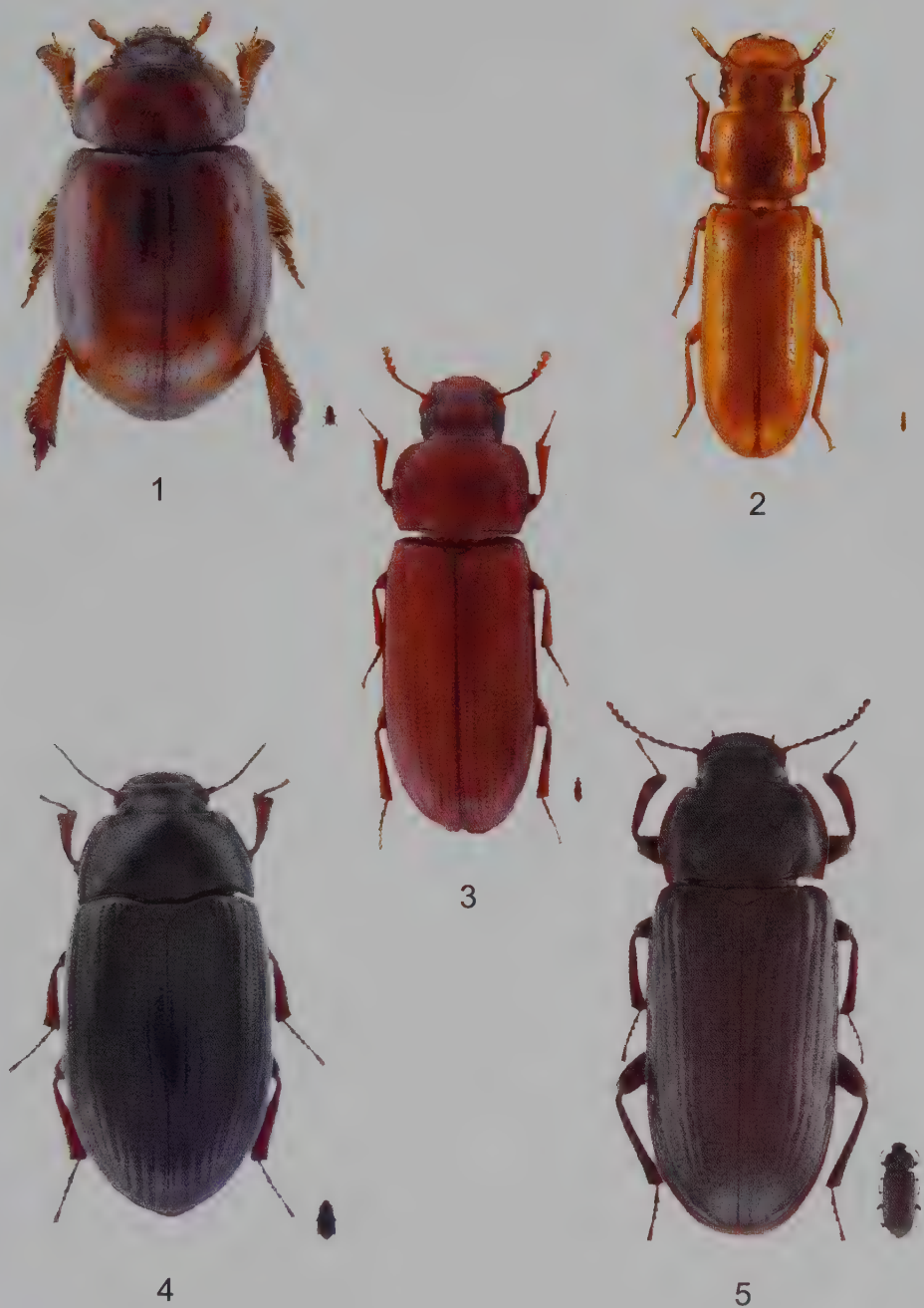


4



5

Phot. 1-5. 1 – *Opatroides punctulatus* BRULLÉ; 2 – *Opatroides vicinus* (FAIRMAIRE); 3 – *Penthicus* (*Penthicus*) *oblongopunctatus* (REITTER); 4 – *Proscheimus arabicus* DESBROCHERS; 5 – *Clitobius* (*Clitobius*) *oblongiusculus* (FAIRMAIRE).



Phot. 1-5. 1 – *Trachyscelis litoralis* sp. nov.; 2 – *Latheticus oryzae* WATERHOUSE; 3 – *Tribolium castaneum* (HERBST); 4 – *Alphitobius diaperinus* (PANZER); 5 – *Tenebrio molitor* LINNAEUS.



Phot. 1-5. 1 - *Phaleria (Epiphaleria) proluxa* FAIRMAIRE; 2 - *Centorus csikii* subsp. *bagdadensis* REITTER; 3 - *Pseudoseriscus griseovestis* (FAIRMAIRE); 4 - *Phtora apicilaevis* (MARSEUL); 5 - *Phtora salinae* sp. nov.



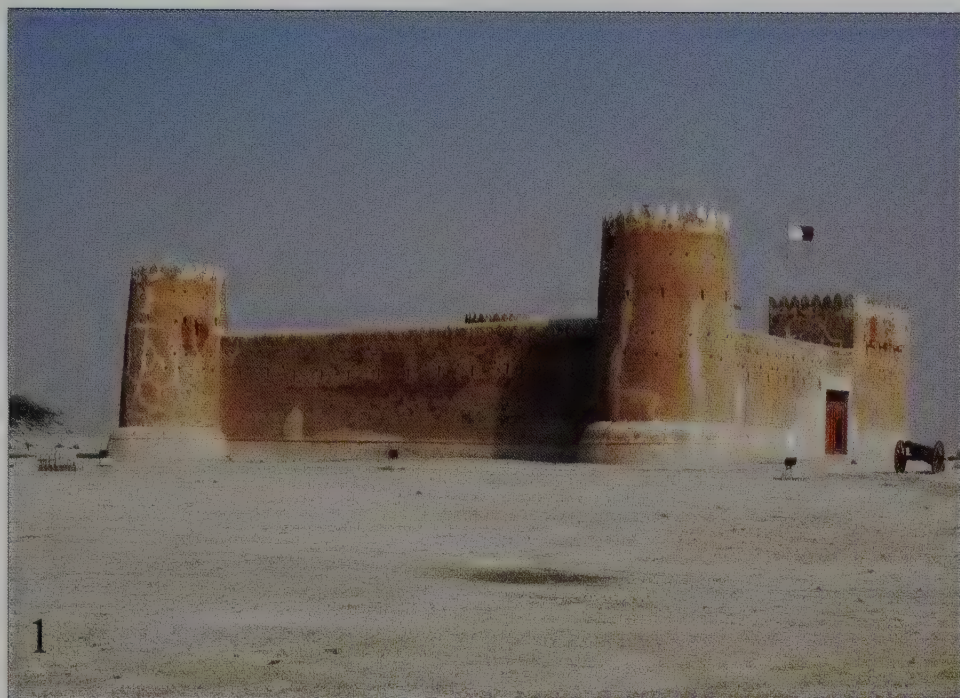
Phot. 1–2. 1 – *Adesmia (Oteroscelis) khaliensis* BLAIR running on the ground in the morning Abu Samrah area, December 2006; 2 – *Pimelia arabica* KLUG digging into the sand, Al Maszhabiyah, December 2006.



Phot. 1-2. 1 – *Adesmia* (*Macradesmia*) *cancellata* (KLUG), Al Zubarah, December 2006;
2 – *Prionothea coronata* subsp. *ovalis* ANCEY.



Phot. 1–2. 1 – Littoral landscape near Abu Samrah, December 2006; 2 – Al Maszhabiyah desert, December 2006.



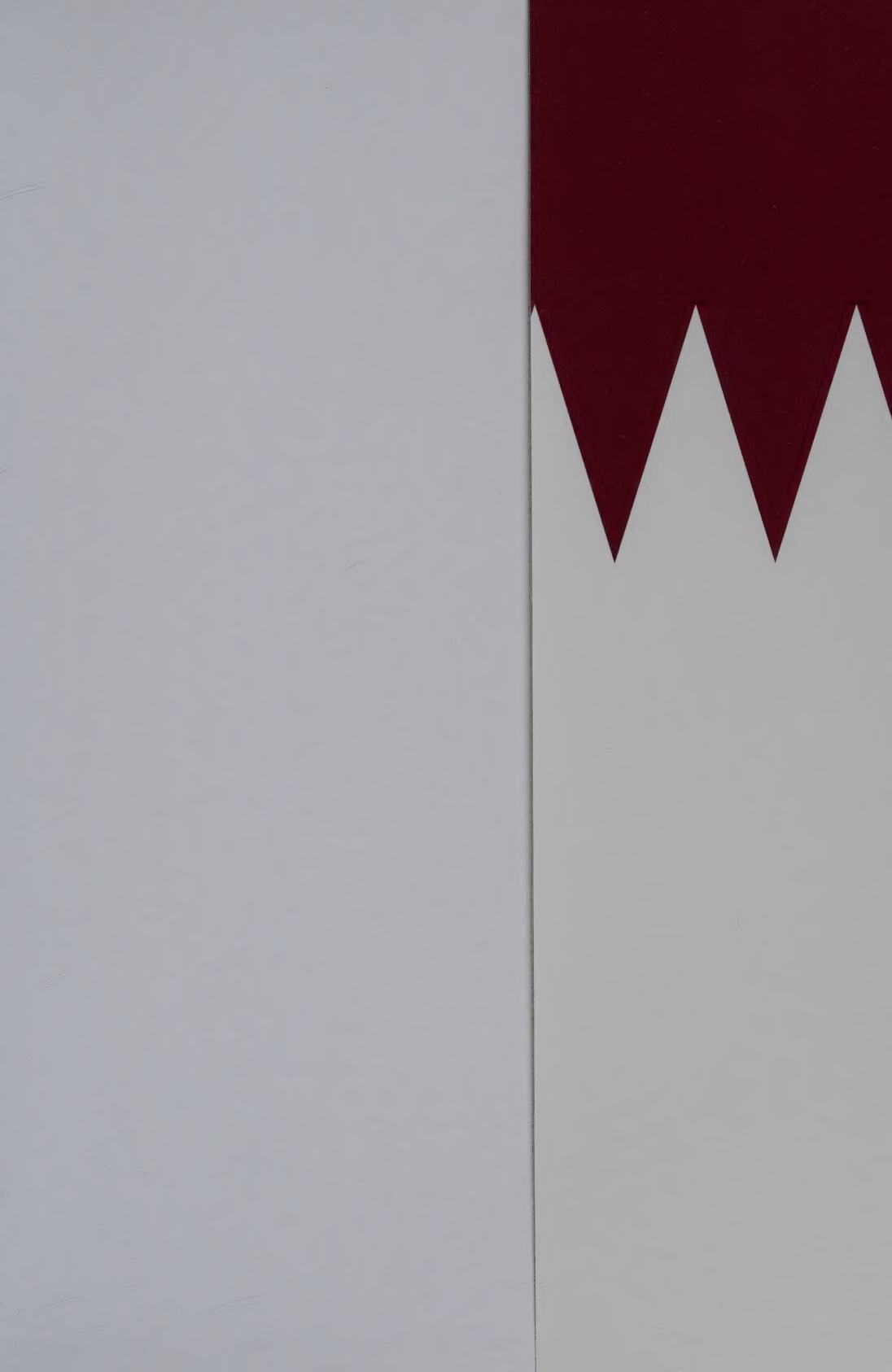
Phot. 1–2. 1 – Al Zubarah Fort (Museum); 2 – Desert in the surroundings of Nakhlat al Oraiqa after heavy rainfalls in December 2006.



Phot. 1-2. 1 – Umm Bab, palm trees at twilight; 2 – Mesaieed, Sealine Beach Resort, littoral sand dunes; garbage pollution is unfortunately obvious on this picture (photos K. MARDINI).



Phot. 1–2. 1 – Al Sheehaniyah, Al Khaiarin Botanical Reserve (photo K. MARDINI); 2 – Al Khor, Malaise trap (photo K. MARDINI).





TOTAL



الوطني QNB